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The Week

Next Week

Judith Weir on new music in the 1980s

Graduate unemployment briefing

Italian universities and the Red Brigades

John Cruickshank reviews Simone de Beauvoir's latest book

Report of research on university teachers of education

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TIMES PAST — THE TIMES

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Colleges for the common man

The colleges and institutes of higher education face two contrasting futures in the 1980s. Either the next 10 years will turn out to be a depressing re-run of the 1970s with diversified and liberal arts higher education suffering the same shipwreck in the 1980s as independent teacher education did a decade before. Or the 1980s could turn out to be the decade of the colleges, just as the 1970s were the decade of the polytechnics and the 1960s were the decades of the universities. Whether the ending will be a sad or a happy one is still finely balanced.

What the colleges at least have right to expect is that they should be given a fair trial, that what they already offer and what they can offer to the diversity of British higher education should at least be understood, that their contribution to students as individuals and to the community (as much as the economy) should be properly recognized. Resources are against them. There is, at present, not enough money to go round and they are surrounded by stronger predators. They must fight against the imperatives of concentration and of excellence, even of "bigness" and "relevance". Yet they must be heard. The game is not as simple as it seemed to be in the 1970s when monotechnic teacher training institutions saw their entire purpose disappear with the declining need for teachers.

The situation of the colleges that were fortunate enough to survive into diversification and the 1980s is quite different. It is impossible to argue that the new styles of low-intensity, human-scale, liberal arts and (largely non-technical) vocational higher education which the colleges are now pioneering are things of the past like certificates of education taught in small academically isolated colleges of education. These styles may belong to a mass future which Britain cannot afford, or not yet, or which Britain does not want. But they do at least belong to the future. In this important sense it is easier to fight to protect the colleges of higher education in the 1980s than it was to defend the colleges of education in the 1970s. It is a different game, difficult certainly but far more hopeful.

The next 10 years should see the revival of the debate about more popular forms of higher education outside the large university and polytechnic, institutions which was obliquely and tentatively begun by the report of the James Committee a decade ago. That committee's proposal for a Diploma of Higher Education and its suggestion that the higher education of school teachers should be consecutive, academic followed by professional, rather than concurrent were the first suggestive speeches in that debate, which was then abruptly cut short by the institutional crisis that teacher education faced in the mid 1970s.

Both proposals have been only half digested by higher education. The DipHE has established a vital but still precarious bridgehead. It still has some way to go before being accepted as a normal part of higher education and still further before it challenge effectively the hegemony of the degree. Similarly the BEd degree, although broadened in scope, has still not achieved the wider acceptance which James hoped to achieve by consecutive rather than concurrent arrangement. In this way degrees in the colleges could have been freed from the straitjacket of leading to a career in school teaching and none other.

Perhaps the most important task for the colleges is to complete the liberation of both these reforms originally suggested by James from the constraints of school teaching and to test their applicability more generally in higher education. The DipHE will no doubt consolidate its bridgehead and become institutionalized in colleges and polytechnics (and perhaps one day universities) as a proper and coherent two-year course and qualification in arts and social studies. The BEd too should be shifted away from being an exclusively teacher education qualification and become instead perhaps a foundation from which to relaunch the idea of a general degree, which has only survived and only barely in the sheltered environment of the Scottish universities.

If during the 1980s the colleges of higher education can institutionalize these two reforms – two-year, sub-degree courses in arts and social studies (alongside the TEC and BEC higher diplomas in vocational subjects), and a new lease of life for general first degrees through a reformed BEd – they will make a considerable contribution to laying the foundations of a wider system of higher education in Britain. This, opening up of the system through modification of both the length and the intensity of courses can probably only be achieved by the colleges. The polytechnics may help with the advance of the DipHE but they must remain essentially vocational institutions with a strong commitment to the manpower and research needs of industry (although with their vocationalism interpreted in as broad and liberal a way as possible). The universities may have had the opportunity in the early 1960s to undertake the second of these tasks, as Lord Robbins urged them to do, but that opportunity has passed. The cuts of the next few years can only intensify the commitment of the universities to academicism. So in a very important sense too great a restriction on the operation of the colleges over the next ten years, whether through actual closures or simply through resource starvation, may be an accidental decision to cut off British higher education from its necessary future.

'The next 10 years should see the revival of the debate about more popular forms of higher education outside the large university and polytechnic institutions begun by the report of the James Committee a decade ago'

Not all the colleges of higher education will see their futures in these terms. Those that do will face formidable problems that arise from the quality and adaptability of their existing academic staff. The road may be one to eventual institutional survival but it will not be a smooth one. At times a genteel descent into the comparative comfort of a new Crombie may even seem an easier option. For a few of the colleges which have remained essentially monotechnic teacher training institutions there may in fact be no real alternative. There has always been a strong case, in theory, for strong specialist institutions of teacher education, but it has always been difficult to fit this theory to the actual institutions that are available for such a purpose. But there are now few institutions left in the monotechnic category. Most have successfully diversified into related professional areas and into general higher education, despite the rather self-interested scepticism of senior institutions.

It is reasonable to regard the colleges as an important "third force" in higher education, to balance the universities and polytechnics. Certainly that is a more accurate frame of reference than to regard them as some residual element of the public sector after the polytechnics have been abstracted. But it is wrong to regard the colleges as a homogeneous section. They cover a much wider spread of types of institution than either the universities or the polytechnics. That is a source of weakness (in bargaining) but also of strength (by adding to the diversity of the system).

The largest category within the colleges of higher education may be those institutions, largely teacher training with moderate quantities of further education added, which have concentrated on diversification into more general degrees. The smallest, and most vulnerable, category may be those colleges which through choice or necessity have remained predominantly committed to teacher education.

But there are two other substantial categories of college which should not be forgotten. The first is what may be called the proto-polytechnics, those colleges which are polytechnics in all but name (and perhaps in size). Their students, their courses, their preoccupations are very similar to those of the polytechnics. So it seems sensible to regard them in a similar light, and for the Government not to discriminate against them in funding because of an accident of category.

The second substantial category is what might be called the proto-community colleges, those colleges, often with a very heavy commitment to part-time courses, which see themselves as developing into comprehensive institutions that offer all sorts and types of education for students aged 18 and over. To such colleges conventional distinctions between advanced and non-advanced courses, between formal and informal education, will come to mean less and less. It is in such colleges that the idea of education as a social commodity will be first tested. With school sixth forms being shaken to their foundations and the emergence of a strong tertiary sector, the relevance of such comprehensive post-18 institutions is bound to grow.

Britain in 1982 still has a system. In this respect the polytechnics are little different from the universities. Both are principally concerned with higher education for an elite (in a non-pejorative sense) and/or for experts. We are still profoundly unfamiliar with the idea of higher education for students who are not necessarily going to join a political, social, or economic elite, however loosely and democratically defined, or who are not going to follow careers which require highly developed conceptual or technological skills. Such an idea conjures up immediate fears of slipping standards, cafeteria courses, and the characteristics of American higher education which are regarded with so much suspicion on this side of the Atlantic.

Yet higher education for the common man should not be such a frightening idea. More "low-intensity" higher education need not lead to a collapse of standards. Indeed a better educated population with a more substantial personal involvement in higher education through local colleges is far more likely to recognize the need for more advanced, and expensive, forms of higher education in universities and polytechnic. Nor is it inevitable that Britain's liberal arts community colleges of the future should mimic those of America today. The job of the colleges in the 1980s, in which they deserve the support of the rest of higher education, will be to help to evolve "low-intensity" styles of higher education in a British mould – higher education for the common man.

Laurie Taylor

"No, quite honestly I think it's one of the most important things that's happened in, well, let's say, the last decade, or actually when you come to think about it, the last couple of decades."

"Really?"

"Oh yes. It's *the* cultural movement of the second half of this century. No doubt about it. I mean I was brought up with all the usual attitudes. You know. Women were second class citizens; dependent, submissive. All that stuff."

"Really?"

"Made for housework and childbearing. Brought into the world to service men. You name it – I was socialized into it."

"Mmm."

"Well I don't need to tell you. But it really was the whole package – what I always call the wholesale translation of cultural variants into biological absolutes."

"Oh yes."

"Mind you there's still a hell of a long way to go. No doubt about that. And I don't just mean in the formal structural areas. You know, bringing women's pay up to the national average, making damn sure they don't get squeezed into domestic subjects at school, ensuring that they get a share of top positions in the civil service and higher education. Still a long way to go there. And let's not forget about putting our own house in order. Only 3 per cent of professors are actually women. Right? No, I don't mean just that sort of thing."

"No?"

"Oh no. What I think is even more critical is the day-to-day position. The mundane reality if you like. All that apparently trivial business about opening doors and getting drinks at El Vino's. That's the crux of the matter if you ask me. The informal discrimination."

"Informal?"

"Exactly. The million and one *little* ways in which the trick is worked. That's where you find the really thick layers of false consciousness. Remember what the old Situationists used to say. How did they put it?"

"I'm not quite certain, I'm afraid."

"The revolution in everyday life. That was it. Can't remember the exact words but roughly. Anyone who talks of a revolution without realizing the need for a revolution in everyday social and sexual behaviour has a corpse in their mouths. That was it."

"Really?"

"Oh yes. No doubt about it. And they were spot on. Spot on."

"Darling?"

"Yes my love?"

"One tiny thing".

"Yes?"

"Do you think you could get off me for a moment. You're really rather heavy."

Pay battle opens with 2.5% offer

by David Jobbins

Lecturers in universities, polytechnics and colleges are under mounting pressure to settle for pay rises well within the 4 per cent limit.

This week's opening offer of 2.5 to staff in the public sector is one of the lowest in the current pay round and significantly below the early offer to schoolteachers. And Sir Keith Joseph, Secretary of State for Education, has pre-empted formal negotiations with the university lecturers by guaranteeing that institutions will keep the cash saved if the unions accept less than 4 per cent.

His initiative, which has support from the Cabinet, was made through the columns of *The Times* two weeks ago. It said the University Grants Committee would not claw back money from universities where staff settled for less than the national agreement.

But it was firmly rebuffed by the Association of University Teachers, which is thought unlikely to be involved in formal negotiations over its April settlement before the late spring. Its general secretary, Mr Laurie Sapper, said there was no way the guarantee could be monitored as salaries were not earmarked within the recurrent grant. While the AUT's claim has not ben formally drafted, it is expected to follow those of other public sector unions in demanding an increase in line with inflation.

College lecturers had claimed 12 per cent and £250 across the board. Their leaders described the employers' opening offer as contemptible. The national council of the National Association of Teachers in Further and Higher Education had already condemned the 3.4 per cent offer to schoolteachers and warned that a similar offer for lecturers would be an abdication of responsibility for further education by the employers.

This week's Burnham further education committee was said by some of those present to combine elements of a Feydeau farce with *Alice in Wonderland*.

Natfhe and the other unions on the teachers' panel carried out their threat to refuse to negotiate with the representative of the Association of Polytechnic Teachers, Dr Tony Pointon, present. They excluded the APT, given a seat on Burnham by Sir Keith just before Christmas, from the panel and made clear their opposition to Dr Pointon's presence when the formal bargaining session began after hours of informal discussions. All the union representatives except Dr Pointon then withdrew, leaving him formally to present the 12 per cent claim.

"The management offered 2.5 per cent which I formally rejected and agreed to an adjournment *sine die* to consider the implications," Dr Pointon said.

There will now be consultations between management and unions to find ways of continuing the negotiations in view of Natfhe's determination not to compromise its position over the APT. But the employers will be opposed to adopting a course of action which could be seen as overt or covert repudiation of Sir Keith's decision that the non-TUC union should be recognized.

Dr Pointon, who had missed his brother-in-law's funeral to attend the APT's first Burnham, was deeply critical of Natfhe's approach. "It is very sad, that when the management is making such a paltry offer they should be so concerned with gamesmanship," he said. "To start playing the poor loser at a time like this is very regrettable."

But Mr Peter Dawson, Natfhe's general secretary and secretary to the teachers' panel, rejected accusations that the union was putting the issue of the APT before its members' interests.

The low offer takes into account the difference between the numbers of lecturers assumed when the pool quantum was fixed by the Government and the actual numbers the local authorities will have to pay. Management sources said this should be set against the background of confusion over local authority finances but significantly they did not refer to the 6.9 per cent settlement with local government manual workers.

Leader, back page

CDP presses for direct funding

by Charlotte Barry and Patricia Santinelli

Polytechnic directors are becoming increasingly worried about the failure of many local authorities to supplement next year's allocations from the advanced further education pool.

The Committee of Directors of Polytechnics has decided to put pressure on the new National Advisory Body to persuade the Government to introduce direct funding for polytechnics and larger colleges.

There is evidence that hard-pressed authorities are refusing to make up the shortfall between next year's allocation and polytechnic budgets. Some institutions face cuts of more than £1m, which will lead to course closures and large-scale redundancies.

Yet figures released this week by the CDP show an overall 16 per cent rise in first year enrolments or full-time and sandwich courses, and an increase of 20 per cent on degree courses in polytechnics.

CDP chairman Dr Ray Rickett said this was proof that the present joint funding arrangements were totally inappropriate for the polytechnics, many of which were bigger than universities.

Sunderland's authority this week withdrew its £458,000 support for the polytechnic and told it to fund non-advanced courses out of its £9,930,000 pool allocation. Dr Peter Hart, the rector, said the position was "morally indefensible" and would lead to the closure of many courses catering mainly for local people.

Compulsory redundancies are inevitable at Liverpool Polytechnic where, out of 600 lecturers could lose their jobs as a result of a £1,900,000 shortfall in next year's budget. The polytechnic has asked the city council if it can absorb the cut over the next three years. The City of Liverpool College of Higher Education and the two colleges of Edge Hill and Christ Church Calder face a total cut of £1,400,000.

At Birmingham Polytechnic the governing body's finance and resources committee agreed this week to use the chairman's casting vote to a £500,000 reduction which will lead to the loss of 100 jobs.

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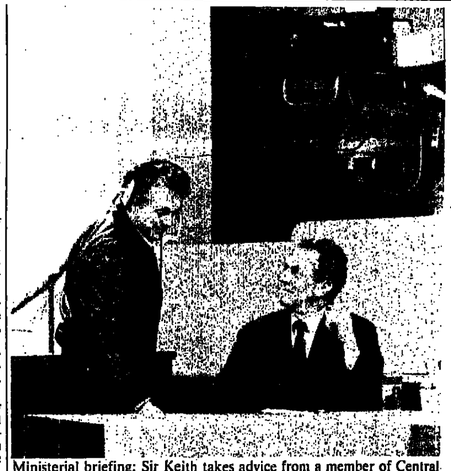

Ministerial briefing: Sir Keith takes advice from a member of Central Televisions's production team at Aston University.

UGC proposal is dropped

Ministers are looking at ways of making the University Grants Committee more accountable but it is understood that they have dropped plans to hive it off.

Sir Keith Joseph, Secretary of State for Education has been studying for several months a working party proposal to hive off the UGC. But because it was only conceived as a paper measure to make civil service cuts, which would make no real difference in staffing, it has now been effectively shelved.

But Sir Keith is known to want some changes and the Committee of Vice-Chancellors and Principals will on how it should be reshaped, on how it should be re-shaped.

Last week he suggested during a televised debate at Aston University that ministers should have given greater guidance to the UGC in making the university cuts.

He was answering a challenge from Professor Frederick Crawford, the vice-chancellor, that the UGC had been given no mandate to protect the wealth-creating sector of the universities. Sir Keith admitted that there had been "some arbitrary element" in where the UGC axe fell.

Salford is given extra time for cuts

by Ngaio Crequer

Salford University has been given an extra year to spread its cuts but the University Grants Committee has decided that most others must follow the guidelines laid down last July.

Letters were sent this week to several vice chancellors telling them what the UGC thought of their academic plans and confirming previous advice on student targets and subject changes.

Last week's meeting of the main committee was adjourned before it reached the crucial question of the confusion over the implementation of the national compensation scheme for lecturers. Another meeting was being held this week. Salford is the only university to be given extra time although about a dozen had pleaded that they were special cases.

Salford has been told that the UGC rejected its plea for a two year extension but "it is minded to agree to an extension of the final run-down period to four years (instead of three) with grants for 1982–3 and 1983–4 (but not 1981–2) increased accordingly."

It said this was decided not for financial or primarily academic reasons but because with a relatively small management team the university "may need a little more time in which to accommodate major changes."

They have confirmed the original student targets but want to discuss various aspects of the academic plan with senior officers.

Aston University has been told there will be no change in either grant or student numbers, nor will there be any adjustment if, as the university believes, there is a modest shortfall in numbers in 1984–5.

The committee notes that there will be a reduction in engineering students greater than that proposed by the UGC, and that the university proposes to retain biological sciences (which it was told to consider discontinuing) at a reduced level. It says there will be advantages both to the UGC and the university if the biological sciences subcommittee visits in the near future.

The committee reiterates its advice on business and management studies and asks Aston to reconsider its plans for the department of educational inquiry and environmental planning and policy studies. It is impressed by the university's response to proposed changes but cannot say yet anything about specific requests for earmarking funds for new developments.

Bradford has been told it can increase its engineering numbers by 50 and the grant will be increased accordingly. But the committee has "not yet considered proposals for initiatives involving claims on funds."

Keele has been told there is no change on student numbers and it is up to the university to decide about Russian.

Stirling has been told that the UGC is not prepared to change its original grant cut and student targets except in the area of business studies if the university can also secure additional private funds to set up a new department.

Professor Duncan Timms, deputy principal said staffing costs would now have to be cut, involving redun-

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Sussex keeps union cash

A new system of student union finance is being used by Sussex University to recover the costs of a two week occupation of an administration block.

Under arrangements introduced by Dr Rhodes Boyson when he was under secretary for higher education, the student unions receives £20,000 a month through the university, half of which is paid directly to union staff.

But since the occupation, in protest at the expulsion of two students alleged to be involved when tomatoes were thrown at Dr David Owen, MP, the university is deducting what it calculates to be the salaries of employees unable to work because of the students' action.

It also intends to keep back enough money to cover the cost of any repairs and cleaning needed after the occupation ends.

The move, authorized in principle by the university council last year, is believed to be the first time the new financing system has been used in this way. Although the National Union of Students believes the powers were never intended to be used in such a way, it seems perfectly legal.

Instead of the £10,000 expected, only £600 has been sent to the union this month.

The loss of income has added to the union's financial problems. Treasurer Mr Dave Cryer says the union has liabilities of about £20,000 although other sources put the figure as high as £40,000.

The university has said that if the union becomes insolvent it will have to step in to sort out the difficulties.

Support for the occupation was said early this week to be dwindling, and an emergency general meeting to call it off was scheduled for yesterday.

The NUS added its weight to appeals to end the occupation. It feels that events at Sussex are generating bad publicity. An appeals tribunal this week substituted more lenient sentences to two students expelled for taking part in the Owen incident.

Animal names unit needs cash

by Robin McKie

The closure of a top international zoological unit, based in Britain, is likely unless urgent moves to raise cash are successful. The unit, the International Commission for Zoological Nomenclature, housed at the Natural History Museum, London, will be forced to close unless it can raise at least £70,000 a year in running costs, its secretary, Mr Richard Melville warned this week.

At present the commission, which judges conflicting claims in the scientific nomenclature of animals, receives about £18,000 a year from a trust. "This means staff are getting purely nominal, or no, salaries and are operating the commission on a largely voluntary basis. This cannot go on much longer," Mr Melville stated.

Next month, the commission intends to launch a campaign to raise funds and has enlisted the support of about 30 eminent zoologists, including David Attenborough and Lord Zuckerman. It also intends to distribute letters urging support through the journals of various academic organizations.

The commission is made up of 26 zoological experts from various countries who adjudicate on calls for changes in the exact scientific naming of animals or on claims for new zoological nomenclature. The commission staff at the museum deal with more than 1,000 claims a year and without their support the commission experts could not operate.

"Our work is an essential element in communications between zoologists throughout the world," Mr Melville said, adding that as part of its appeal the commission would be asking charities and trusts to provide cash to fund its operations.

This view was backed by Dr Robert Martin, reader in physiological anthropology at University College, London, who said the closure of the commission would be a disaster for zoological research. "Its work ensures that zoological nomenclature throughout the world is consistent and without it there would be chaos."

He said it was vital that scientific terms were standardized so scientists could communicate properly.

Halsey questions SSRC's role

by Paul Flather

Professor A. H. Halsey, professor of social and administrative studies at Oxford University, has told Lord Rothschild the Social Science Research Council could have done its job better, and the Government should not use the council for political patronage.

Professor Halsey, who was not reappointed for a second term on the SSRC council last September amid considerable controversy, has put in a brief but outspoken submission to Lord Rothschild's independent review into the work of the SSRC.

Professor Halsey said there were no areas of research supported by public funds which could be better supported by the SSRC, and went on to pose an entirely new question: "Has the SSRC done its job well?"

"My answers is 'no'. It could have done better," he says. "The reasons for its relatively poor performance are two-fold. There has been rather poor staffing and, more important, too many council members are not distinguished research workers in the social sciences.

"Indeed, though it is scarcely credible, persons are appointed to the council who never were distinguished in such research, and within the council there has been an inverse relation between such distinction and effective power in the running of the organization."

He says the remedies are not mysterious: improved recruitment and mobility between the council and major Whitehall departments should be ensured; and no one should be appointed to council unless he is an active producer of social science research, or is elected exclusively by those who are.

Professor Halsey does not mince his words on the issue of political interference in the workings of the SSRC. "As to council membership the political parties, and especially the current Conservatives, must be persuaded that the council is an inappropriate place for political patronage," he says.

Turning his attention to what he calls the "Rothschild question," Professor Halsey gives three main reasons why the principle of allowing customers to pay for social science research cannot operate successfully.

First, there is no clear contractor for much social science research which has to be taken on board by a civilized society, and cannot be left to the market place. Second, he says, the growing difficulties faced by the University Grants Committee, the other major supporter of research, are "an urgent extra reason for more rather than less generous Exchequer funding of fundamental social science research". Finally, public funds are needed to support collaborative research across disciplines, for example in areas such as race relations and industrial relations.

He says the "Rothschild question" usefully concentrated Whitehall, research council, and university minds in the 1970s. He adds: "Few, if any, have simple belief in that answer now."

Professor Halsey also says there would no be point in giving the UGC total responsibility for social science research. "It would need to set up panels of judges as does the SSRC under the present system." The advantage would be an alternative network of cognoscenti, the disadvantage would be duplication.

Professor Halsey is one of Britain's leading social scientists, who had links over 15 years with the SSRC before he was "sacked" from council last year. He gave the 1977 Reith lectures, and is a prolific producer of research.

A close shave for students demonstrating against the cuts

Lecturers prepare NTI case

Strong defence of established salaries, working practices and lecturers' tenure might be needed as a result of the proposed New Training Initiative, the leading lecturers' union says today.

The National Association of Teachers in Further and Higher Education which wants to see a supplemented Manpower Services Commission rather than Government proposals, says it fears that new work opportunities may be seen by some college principals as a defence against redundancies.

It warns that it will not allow this new work (involving at least the equivalent of some 80,000 full time further education places) to be developed on unacceptable terms.

The union says: "Only if the proposed new places carry sufficient funding to maintain and improve staffing levels on existing terms will it be possible for the association to be fully involved in seeking to implement the MSC's Agenda for Action."

It believes that college staff should, irrespective of the courses in which they contribute, have permanent status. This did not mean that there was a major reduction in provision there could not be a reduction in the workforce.

"The use of temporary contracts is a device which attempts to evade rights and will be resisted by the association".

Part-time staff should be offered associate lecturer contracts and any doubts about the period of funding should not be used to justify temporary appointments. And the association cannot see why existing arrangements on conditions of service should not accommodate the developing training field.

Only if adequate resourcing in terms of staffing, levels, grades of staff and remission is made available will the introduction of training on the scale envisaged, avoid the problems associated with TEC and BEC.

Bristol court comes under pressure

by Ngaio Crequer

Lecturers and students are to lobby Bristol University's court to try to reverse the council decision to close the architecture department and reduce the faculty of education by half.

At last week's council meeting, around 1,000 staff and students took part in a silent vigil to persuade the university body to look at alternative ways of saving money. Now they have forced court to hold a special meeting.

Council last week voted by 33 votes to 14 to accept the academic plan prepared by the committee of deans and approved by senate which would lead to the loss of about 122 jobs. The senate proposal involved rejection of an earlier plan to make the cuts across the board.

The national headquarters of the Association of University Teachers is backing its local members. Mr John Reilly, president of the AUT, said council failed adequately to examine a union alternative strategy. He said that 11 of the 33 members of council who supported the closure decision had also been members of the committee of deans.

Mr James Campbell, president of the Bristol students union said this week he would support any reference to the court. "Not only is there an alternative strategy to the cuts, but the department of architecture had also prepared a plan showing how it could be slimmed down.

"There are no rational or logical grounds for the decision. I am more sad than angry. Some 300 academics have signed a letter criticizing the way the university has handled these cuts."

The Royal Institute of British Architects deplored the original decision to close architecture and remains very unhappy.

Demand for parity

Leaders of university non teaching staff are disappointed that vice chancellors have failed to respond to their demand that secretarial, technical and manual workers should be treated as favourably as academics if they are made redundant.

Representatives of the university employers declined late last week to go further than to promise to put up a paper at the next meeting of the central council for non teaching staffs.

Union leaders are in some difficulty because they do not accept the case for redundancies but are concerned that some non teaching staff are opting for various forms of severance scheme.

The University Grants Committee has indicated it will meet in full the costs of staff who retire early under schemes agreed before August 1 last year. But guidance for recovery of the costs of compensation to staff not covered by established schemes has still not emerged from the UGC.

Education ministers have found themselves isolated within the Government for their favourable treatment of university academics – justified by education secretary, Sir Keith Joseph, as the need to buy out tenure.

Vice chancellors have said that non teaching staff should be treated equitably but government money to underwrite the costs is not within sight.

Mr Harold Wild, acting secretary of the council's trade union side, said: "We asked for a cast iron guarantee that non teaching staff would be treated no less favourably.

Aberdeen cuts criticized as economic folly

The 25 per cent cut imposed on Aberdeen University is "economic folly" since the university is a priceless asset in the urgent development of the oil industry as well as traditional local industries. So says a joint statement from Aberden's Lord Provost, the convener of Grampian Regional Council, and the principal of the university.

In a letter sent to education secretary Sir Keith Joseph, the University Grants Committee, the Scottish Secretary and local MPs, they urge a reconsideration of the extent and timing of Aberdeen's cuts.

The university is one of the largest employers in the city, says the statement, and is the only university in the north of Scotland, in the heart of a major growth area. The cuts, which leave Aberdeen with no prospect of avoiding a seven figure deficit, this year, show inadequate recognition of its unique place.

"To demand of a flourishing enterprise such radical retrenchment in so short a time is directly contrary to the principle of investing in success," the statement concludes.

Essex takes on the VAT officials over adult fees

Essex County Council is resisting attempts by Customs and Excise officials to levy Value Added Tax on more than half its adult education courses.

Local VAT inspectors have told the authority to provide a full list of classes so they can decide which are "recreational" and therefore liable to 15 per cent tax from September 1.

Essex is refusing to cooperate on the grounds that it is not the job of Customs and Excise officials to decide. It has also asked the Association of County Councils to intervene on a national issue.

The Essex move comes only weeks after a meeting between the Department of Education and Science and the Customs and Excise department. This followed a series of isolated complaints from community centres all over England about attempts to levy VAT on sports and recreational classes. Crampton education authority in Scotland is already appealing against a decision to tax most of its adult education classes.

The problem seems to arise from strict interpretation of the Finance Act, which states that local authority classes should be subject to VAT, if they do not match the general university or school curriculum. The DES asked Customs and Excise officers to take account of local authorities' own definition.

Mr Stephen McNair, adult education officer for Essex, said: "Our impression is that following the meeting with the DES the Customs and Excise have decided to raise the issue with a major local authority and Essex happened to be handy."

He warned that VAT charges could mean the end of adult education in Essex. A 33 per cent fee increase this year to 80p an hour had already led to a 10 per cent drop in enrolments to 47,000 students on 3,000 classes.

"The VAT inspectors told us that we should be able to agree about areas like flower arranging but we pointed out that flower arranging was one of a number of art forms that we teach and no less educational than painting, pottery or sculpture."

Southampton to house archive

The Government is to establish an archive at Southampton University for a unique collection of the papers of the first Duke of Wellington.

If accommodation is ready in time the papers will be formally handed over by the end of the year. The university will make staff available for cataloguing and conservation and proposes to establish a Wellington Papers Research Committee to provide expert advice on the management of the collection.

Candidates named

Edinburgh University's joint consultative liaison committee has nominated its regional councillor and former Edinburgh student Mr Willy Roe for election. Mr Roe is also assistant director of the Scottish Council of Social Service, on the board of the university's Wolfson Microelectronics Institute and involved in moves to establish a Lothian Energy Studies Centre.

Other candidates for the election on March 12 are Liberal leader David Steel, South African journalist Mr Marimuthu Subramoney and the Rev John Deason, secretary of the Right to Work campaign.

German lesson

Professor Hans-Joachim Bohme, the East German minister for higher and technical education, spent three days this week examining the British higher education system. He had discussions with Sir Keith Joseph, secretary of State for Education, and visited London and Leeds Universities, the Royal Society, the British Academy and the University Grants Committee.

'No' to affiliation

Students at St Andrews University have voted against reaffiliation to the National Union of Students by more than 1,600 to 738. Seventy per cent of the students took part in the referendum.

Anger over dental school plan

by Robin McKie
Science Correspondent

A dispute involving deans of London dental and medical schools has broken out over a confidential plan to close one dental school and redistribute its staff and student places among other institutions.

The report, by the deans of London dental schools, recommends that the Royal Dental School be closed and places and staff shared with the capital's remaining four undergraduate dental schools.

The university had previously planned to move the Royal Dental School, presently based at Leicester Square, to St George's Medical School at Tooting, where £8m has been spent so far on buildings to accommodate the transfer.

Instead, the deans recommended that it would be better to concentrate dental education at four centres, and not the present five. As the Tooting dental project was the one still uncompleted then it should be axed.

However, a minority report, attached to the original document, was prepared by Professor William Houston, dean of the Royal Dental School, who points out that "an inestimable, but unquestionably enormous, amount of time and effort, supported by public money, has been spent over 30 years in planning and negotiating for the move to Tooting". The school's preclinical school has already been set up at St George's and Professor Houston simply describes the majority report's recommendations as "the wrong policy".

In a separate cost analysis, Professor Houston, together with his vice-dean, Professor Harry Blackwood, and Dr R. D. Lowe, of St George's, maintains that both the majority and minority report recommendations would result in the same long-term savings of about £630,000.

Dr Lowe added: "I think the likely outcome is that the university will not accept the majority report and will reaffirm its long-standing plans to allow the Royal Dental School to merge with St George's at Tooting where more than £8m has already been invested in new university accommodation which will otherwise go unused".

The majority report also recommends that preclinical student-staff ratios be limited to 1:10 and clinical ratios to 1:5 and proposes that two major dental school groups be established – a South Thames group made up of Guy's, King's and a small unit at St George's; and a North Thames group consisting of the Eastman Dental Hospital and University College and London dental schools.

However, the Joint Medical Advisory Committee is now preparing a new financial review of the report's recommendations in view of the dispute and also with regard to financial considerations, in particular the overall 10 per cent cut in dental student numbers which the Government is currently considering.

The battle for the Royal Dental School, Europe's oldest dental school, is likely to provoke a great deal of bitter dispute before the issue is settled over the next few months. As Professor Blackwood stated: "It would appear that the other dental deans have tried to carve us up. They have all had their new clinical departments but we have been caught in this very delicate transition stage."

Concession on NHS charges for students

by John O'Leary

Critics of the Government's plans to charge overseas students and visitors for the use of National Health Service facilities won a major concession this week with the announcement of a one-year qualification period for free treatment.

Aid agencies and union representatives were meeting Dr Gerard Vaughan, Minister of Health, yesterday to clarify details of the scheme, which will come into operation on October 1. The date could exclude the vast majority of students from charges next year if Dr Vaughan keeps an earlier promise to exempt students already in the country from charges.

Most oversens students would enter the country before the end of September for preparatory language courses or to arrange accommodation and could slip through the net.

Mr Norman Fowler, Secretary of State for Social Services, said in his Commons announcement of the new arrangements, that the qualification period for free treatment had been reduced from three years to one specifically because of representations on oversens students. The charges were expected to raise £6m per year.

Labour and Liberal spokesmen both condemned the scheme and especially the inclusion of overseas students. Mr Alan Beith, the Liberal spokesman on education, said it would cause a huge disparity between those from EEC countries and other, often poorer, foreign students.

The United Kingdom Council for Oversens Student Affairs, which had led moves for the exemption of students from new arrangements, welcomed the modification but expressed disappointment that any qualification period was necessary for students on long-term courses.

Its representatives sought clarification yesterday from Dr Vaughan on a range of issues which did not feature in Mr Fowler's statement. Among them were the situation regarding general practitioners and student health services.

Colleges steer clear of Wadham-style deals

by Paul Flather

A number of Oxford colleges are pursuing overseas funds in return for admitting students, but they are being careful to avoid arrangements like those which provoked anger last week against Wadham for "selling places in return for cash".

Wadham looks set to ride through criticism from some of its students and from a contingent of fellows over an arrangement with a Hongkong businessman. Two places for his children have been guaranteed in return for a £500,000 gift.

The children must still achieve the minimum university matriculation requirements of two grade Es at A level, or their equivalent. The money from Mr Lee Shau Kee, a Hongkong property dealer, is to go to provide student accommodation.

The arrangement only came to light after a number of fellows threatened to resign. The college then issued a formal statement making it clear the two children still had to achieve minimum requirements, and that no other student would be excluded because of the admissions.

St Hugh's College has also been given a £400,000 buildings gift from a Hongkong group in return for admitting three or four students from 1982. The students will be chosen by open competition, and the college retains a final veto on admission.

Mr Ian Honeyman, senior bursar of St Hugh's, said: "We are not in the business of selling places. These students must satisfy us that they are up to our standards, and we have the final say of yes or no."

Many other colleges are known to looking into similar deals with overseas groups. They are keen to secure extra funds to offset government spending cuts, and accepting foreign students does not jeopardise home and EEC student entry now subject to strict quotas. St Hilda's, for example, is close to agreement over a £100,000 gift which would bring a Chinese woman student to the college each year.

Sir Stuart Hampshire, warden of Wadham, said this week he did not want to add anything to the statement. "There has been too much discussion about this already." A spokesman for Mr Lee Shau Kee in Hongkong said he knew of nothing unfair being done.

Oxford Colleges are entirely autonomous, and can accept any students, providing they satisfy the university's requirements. Colleges can also take money in return for a place. Reaction among other admissions tutors has ranged from shock to complacency.

"Frankly it has already been happening at Oxford, and probably always will," one tutor said. "There is some suprise that Wadham were caught red-handed," another don commented. The dissidents, led by Peter Gwyn, a history research fellow at Wadham, are still angry but appear to be powerless.

Mr Gwyn has described the arrangement as the unacceptable face of Oxbridge, and repeated that Oxford should not be a finishing school for millionaires' children.

Leader, back page

An unusual encounter for Dr Ray Rickett, chairman of the Committee of Directors of Polytechnics, in the cause of technology. Some of his Middlesex Polytechnic staff show off a range of toys they are developing in order to bring technology studies within the budget of most schools. The picture shows, (left) Bonny Ng, Don Hardy, Genevieve Tester, Dr Rickett, Judy McDonald and David Macklin.

Salford given extra time

continued from front page

deadlines, and student numbers would have to be cut from 680 in 1981 to 600 in 1982.

Aberdeen was very disappointed at being told it had to follow the original UGC targets. But extra funds for a new chair in engineering have been promised if a degree of external finance can also be found.

Dundee indicated that the argument with the UGC over student targets was far from over. The university was told to stick to original instructions, but the letter is to be discussed at a meeting next week. Dundee is likely to complain that it would like to increase its intake of electronics students, as requested by the Scottish Office, but not at the expense of other students. It will also discuss entry on other courses, including the special Scottish diploma in legal practice.

A spokesman for Bristol University this week confirmed that the UGC had written to them. It is known that the UGC was originally concerned that Bristol might act contrary to the July guidlines.

New post for Rhodes James

Mr Robert Rhodes James, the Conservative party's liaison officer for higher education is to be appointed parliamentary private secretary to Mr Cecil Parkinson, chairman of the party. An announcement was expected this week.

It is a new post, a prime ministerial appointment, and a reflection of the high esteem in which Mrs Thatcher holds the Cambridge MP. Mr James, who is on the left on the Conservative party, will be expected to become far more involved in the policies and philosophy of the party. He will keep his present job.

Last September he refused an invitation to take a Treasury job because he felt he would have restricted scope. He is a firm opponent of student loans and has resisted attempts by Sir Keith Joseph, the education secretary, to resurrect such schemes.

He has lobbied hard for an increase in student grants and spent months arguing that the Government would have to make substantial sums available to universities to provide compensation for redundancy.

Polys aim for better image

Polytechnic governors are launching a national campaign aimed at boosting the image of polytechnics and attracting commercial and industrial sponsors.

The campaign is being spearheaded by Mr Vic Usher, chairman of Middlesex Polytechnic's governing body, who is also chairman of the London borough of Barnet's further education sub-committee.

He will be writing to the chairmen of governors of the other 29 polytechnics to arrange a meeting which will decide how to focus public attention on the opportunities provided by polytechnics and the need for support in the face of public spending cuts.

Mr Usher said that the polytechnics had proved quite conclusively that they were excellent seats of learning, and had filled a void in higher education.

"The problem now is that because of the lack of funds from central government many polytechnics are having to cut the vocational courses for which they were created," he said. "This is a worry and therefore we have got somehow to attract money for business, commerce and industry."

NAB names group leaders

The chairmen of the five working groups established by the National Advisory Body were announced this week, together with the tasks allocated to each. Two polytechnic directors are among the five nominees of Christopher Ball, chairman of the NAB board.

Dr Patrick Nuttgens, director of Leeds Polytechnic, will head the inquiry into art and design, which is charged with assessing the extent of local authority provision. Mr Geoffrey Hall, Director of Brighton Polytechnic, will chair the group on engineering, which will have the initial task of advising the board on the most appropriate branch of engineering to examine first. And Sir Frank Hartley, former vice chancellor of London University, will lead the group investigating pharmacy in the light of cuts recommended by the University Grants Committee.

Mr Ball is to chair the group examining regional structures, while Mr John Bevan, NAB's secretary, will be chairman of the group looking at the data base available for decision making.

CDP calls for direct funding

continued from front page

to the axing of the equivalent of three departments.

Manchester Polytechnic was this week holding urgent talks with the city council. The Royal Northern College of Music in Manchester, the only one of its kind funded from the pool, faces a cut of 33 per cent in its annual £2,500,000 budget.

Proposals which favour a merger of the threatened Manchester College of Higher Education with two further education institutions rather than the polytechnic have been put forward by the city's chief education officer.

A paper *Review of Further Education* which asks for comments by March 22, argues that the less obvious solution of merging the college with St John's College and the College of Building would preserve a second institution of higher education in the city and links with the university. It would also provide an alternative to redundancy for the college's staff who could transfer.

New PGCE is tested

The Department of Education and Science is to pilot a scheme for a school-based Postgraduate Certificate of Education to start in the autumn.

The scheme involves four teacher training institutions and five local authorities. Their names remain confidential as they have not yet met to discuss the exact form of the pilot.

But the scheme is thought to be inspired by the statement of Sir Keith Joseph, Secretary of State for Education, that newly trained teachers should have greater professional and practical orientation, than they do now.

The scheme, which will apply to primary, middle or secondary, aims to narrow the gap between teacher training institutions and schools and between serving teachers and the institutions.

The plan is for around 20 PGCE students out of each institution's quota to spend a greater proportion of their training time in schools, so that they can be more closely involved with their work, pupils and teachers than now.

At the same time, serving, teachers are to help plan and prepare the programme.

The scheme reflects some of the recommendations of a report, yet to be circulated, which advocates that schools should be full partners with institutions in the planning of primary and middle PGCE courses.

Reith lecturer

Professor Denis Donoghue, holder of the Henry James Chair of Letters at New York University, has been chosen to deliver this year's Reith Lectures. His subject will be the failure of contemporary arts criticism. He is also professor of modern English and American literature at University College, Dublin.

Call for two-year PGCE courses

by Patricia Santinelli

Postgraduate courses for primary and middle school teachers should be extended to two years to raise standards, says a report by the University Council for the Education of Teachers.

The report is the outcome of a working party set up by the council in consultation with the Council for National Academic Awards.

It says: "A two-year course is the real practical necessity. This cannot be overstressed. It would imply a radical rethink in order to reconsider questions of balance, content and approach and to maximize the extensive opportunities for enhanced standards that such a length could provide".

It also says it would be equally important to ensure a similar length for for secondary courses.

The report has been presented to the Advisory Committee for the Supply and Education of Teachers' sub-committee currently considering Government manpower projections. These indicate that the demand for primary teachers, at present in a trough will have more than doubled by the end of the decade.

The report argues that now, when demand is slack and popularity rather low, is the time when improvements in provision should be planned.

It warns that any attempt to adjust demand through piecemeal closures should be vigorously resisted. "If courses were now to be closed they could not be readily redeveloped. It would be preferable to respond to low demand by preserving those courses which are now clearly viable, even with reduced numbers and with staff mostly involved in other activities, rather than by resorting to wholesale closures to be followed later by precipitate reopening with inexperienced staff."

The report adds that if it is not possible to extend courses to two years, priority must be given to ensuring that the one year course is as long as reasonably practicable.

"In addition to preliminary experience, 33 weeks is an absolute minimum. Any attempt to filch a little extra time by artificial devices such as a week or two immediately after graduation, or a crash course would be both impracticable and unpopular," the report stresses.

It recommends that forward planning should ensure that induction and in-service programmes are obligatory to extend and adapt initial training. In particular the induction period should be more closely linked with initial training and lengthened.

The working party wants students to be selected rigorously on intellectual and personal grounds, bearing in mind the specific and other curricular needs of schools and candidates who subsequently prove unsuitable should be counselled to withdraw.

Courses should ensure that students can effectively deploy five elements in the professional equipment of pre-secondary teachers: technique, curricular knowledge, understanding, professional knowledge, personal and interpersonal skills and qualities, and constructive revaluation. They should also have a minimum competence in the teaching of language, numbers and physical education, as well as two other broad areas of the curriculum.

Lecturers' union keeps numbers up

by David Jobbins

The main lecturers' union is maintaining its strength despite a constant strem of early retirements and voluntary redundancies – but only just.

A confidential report prepared for leaders of the National Association of Teachers in Further and Higher Education shows that over the 12 months to last December the union grew by 0.8 per cent. But in the polytechnics the increase was just 0.2 per cent.

Some polytechnics have shown a significant fulling-off in membership, but Natfhe was quick to repudiate suggestions that this was the result of a stepping up of recruitment by the rival Association of Polytechnic Teachers, granted a seat on the Burnham further education committee at the end of the year.

In fact APT has only recruited an estimated extra 90 increases since recognition.

The greatest fall over the year was at Kingston Polytechnic. But union officials there blame the 12.7 per cent drop mainly on reduction in the establishment, and administrative problems.

Other polytechnics where membership fell by 5 per cent or more were North Staffs (5.9), Ulster (5), Huddersfield (6), and Sheffield (9.6). Polytechnics where membership has risen include Lanchester (22.6 per cent), Central London (6.8), and Teesside (9.8).

Natfhe's membership including affiliated organizations totalled 69,863. When life members (2,830), student members (875), and overseas members (59) are added, the overall membership is 73,667.

Union leaders regard this as reasonably healthy, given the attempts to reduce numbers in the profession and the tendency for Natfhe members to be among those to leave.

OU students fight for mandatory grants

by Charlotte Barry

Open University students are to meet Government officials to thrash out the estimated cost of providing mandatory grants for all part-time undergraduates in universities and colleges.

This latest development in the long-running OU Students' Association mandatory grants campaign will attempt to reconcile the widely differing sets of projections worked out by each side.

The Students' Association claims it would cost the Government an extra £5.5m to provide mandatory awards for the university's 63,000 home-based undergraduates. Grants for part-time undergraduates in other universities and colleges would add a further £6.75m OUSA says.

The £13m scheme would represent about 2 per cent of the current full-time student grants bill of £600m, according to OU students. But they have clashed with officials in the Department of Education and Science who say the total cost of providing mandatory awards for part-time undergraduates would be £30m.

The renewed campaign by the OUSA spearheads fresh demands in the adult education sector for financial support for the growing number of prospective part-time degree students who are deterred by fees, travel costs and other expenses. Repeated demands to government ministers have led to support for the mandatory grants campaign in principle, but no commitment to providing funds.

Ms Pam McNay, president of the OUSA said: "We are becoming more radical in the sense that we started looking at a very narrow reform which would only cover ourselves, but the more we thought about it the more we became convinced that the whole grants system needed ripping up."

She went on: "We have got to the stage where we feel that even if no more money is put in, it should be shared out more equally. We are not saying that the Government should cut back on full-time student grants but should consider a reallocation of resources within the whole education system."

Fees for part-time students in conventional universities have dropped below the OU level since the University Grants Committee introduced a uniform pattern of charges last year. OUSA now claims that the total fee cost for a part-time degree at a traditional university is £675, at a polytechnic up to £700, and at the OU a maximum of £1,860. Less than 10 per cent of OU students receive mandatory grants from local authorities, and the university is concerned about the fall in applications from those in lower income groups.

Two members of Strathclyde University staff have set off with emergency supplies of food and medicine to Lodz University in Poland which has had exchanges with Strathclyde for almost 15 years. The university chauffeur, Mr Frank Mungall is driving the van, loaned by a local firm, and the co-driver and navigator will be Mr Ronald Crawford, the academic registrar, who organized the appeal.

Staff contributed £3,750 for the Lodz staff and their families, and most of the money has been used to buy tinned and preserved food. Some medicine such as penicillin, antibiotics and painkillers are also included, along with soap, washing powder and toothpaste.

Europe plans Mars space probe

by Robin McKie
Science correspondent

Europe is planning its first independent space mission to the planets. At its recent meetings, the European Space Agency agreed to set up a feasibility study into the building of a probe, which would be known as the Keplar–Mars mission, and which would be launched by Europe's own satellite rocket Ariane.

The probe, which would explore the upper Martian atmosphere, is one of seven candidates for the next scientific mission to be approved by ESA and indicates the growing confidence of European scientists to undertake complex and sophisticated space research independently of the Americans. ESA has already agreed to launch a probe to investigate Halley's comet. America recently cancelled a similar mission.

The other potential projects which will compete with the Keplar-Mars short for priority funding include Disco, a solar probe; a lunar mission; either an ultra-violet, or an infra-red, or an X-ray observatory; or a cosmic infra-red background survey.

These missions will be funded from ESA's science budget, which is to rise slightly between 1984 and 1986 by about £2m a year.

However, agency officials are reserving their greatest enthusiasm for the fact that ESA has now, for the first time in its history, agreed to a fixed level of funding for its next five years of operations. These funds cover ESA's mandatory programmes – its science and general support activities – which are considered to be the cornerstone of its operations.

By fixing these funds at 920 million accounting units (equivalent to about £550m; for the five-year period the agency hopes this will provide stability to plan more efficiently and economically and also prevent some countries individually vetoing annual budgets for political reasons, as has been done in the past.

Britain's Dr Harry Atkinson, a vice president of ESA who chaired the meeting which decided on the five-year budget, described the agreement as "a remarkable action". "This development means agency officials will now have the freedom to plan our space science a lot more cost-effectively."

The agency has also agreed to the development of four optional programmes to be funded through independently agreed contributions. These were for research into remote sensing of Earth's resources; the further development of Ariane to allow it to launch greater payloads; improvements to Spacelab, the manned space station to be carried by the US Space Shuttle; and a communications satellite programme.

The remote sensing programme would include a mission known as ERS-1 which would use complex radar devices to study oceans, wave patterns and wind-sea interactions, while the communications programme will involve Britain in making major contributions to L-sat, an experimental satellite that will lead the way to direct satellite television broadcasting in Europe.

Social work courses review 'overdue'

A major review of all social work training courses was long overdue and not motivated by any desire to cut courses based in universities and polytechnics, the Central Council for Education and Training in Social Work said this week.

A letter has been sent by the council to all higher education institutions offering social work and to employers asking for comments on a series of questions on the patterns of qualifications and forms of training of social workers.

Details of the review were made public by the council last week, but concern that the review might be used as a means of justifying reductions in social work provision has built up since the plans leaked out last year.

Mr Reg Wright, assistant director for the council, said the origins of the review went further back than the present round of cuts. "There has been growing concern for some time about the relationship between social work courses on offer."

"We want an open dialogue and debate, so that views from everywhere can be collected. There is no conspiracy with employers or anyone else and we have not made up our minds about anything." Replies are required by September.

The council believes that some of the training policies which were appropriate in the climate of the early 1970s may need to be modified but up since the plans leaked out for the 1980s. A change of direction would reflect current public expenditure cuts, changes in the type of person opting for social work, and new manpower needs for the 1980s.

A key area under discussion is the current distinction between courses leading to the Certificate of Qualification in Social Work (COSW) offered in almost 90 universities, polytechnics and colleges, and the Certificat of Social Services (CSS) offered in 30 colleges.

The council asks in its letter what the implications of altering the status of these qualifications might be, and to what extent the level of education institution involved should affect the status of qualification gained by students.

Merger brings UGC cash

The University Grants Committee is to provide more resources for research when the University of Wales Institute of Science and Technology, and University College, Cardiff merge. The two institutions are finalising detailed plans which will eventually lead to the creation of a new Cardiff College within the University of Wales.

Dr A. F. Trotman Dickinson, the UWIST principal, told court last week that the integration of the two universities would double the numbers in about two-thirds of UWIST's subject areas.

The UGC has stressed the greater back-up that such consolidation would provide for research. More over the chairman has stated his intention that more resources should be forthcoming to sustain the research."

He said that UWIST's house "was demonstrably in order up to 1983-84" and that reductions had been made without redundancies. "Staff on both sides of the park must be convinced that there is no time-bomb ticking away in either college to explode after integration.

"Fortunately both colleges have been most explicit in stating that integration must begin with demonstrated financial provision made for staff entering the new institution from either college. There must be no question of integration being the cause of financial insecurity."

UWIST faces a 20 per cent cut in expenditure which will be applied unevenly with a large reduction in building.

Student appeal to Hailsham

Two students who failed in an attempt to sue Aston University when their chosen courses were dropped only weeks before they were due to begin have decided not to appeal against the judge's ruling.

Instead they are to make their case to the Lord Chancellor, Lord Hailsham, who is the Visitor at Aston. But if this fails they are likely to consider returning to the courts with their claim for damages against the university.

Last week a Birmingham county court judge rejected their plea that a registrar was wrong to rule that their claim was not within the jurisdiction of the courts.

The two are Mrs Amanda O'Brien and Ms Clare Casson, both students at the university. Mrs O'Brien, 26, was offered a place to study human communications but turned to human psychology when her first choice was axed. Ms Casson, 19, took up a place to study behavioural studies when her first choice of urban planning, ergonomics and sociology was dropped by the university.

They were granted leave to appeal, but this had to be lodged within 18 days of the hearing, and it was decided to follow the court ruling that the case was within the Visitor's jurisdiction.

The National Union of Students has been advising the two students Regional officer Mr Gary Chambers said this week: "We wanted to use a legal mechanism to help stop educational institutions from making last-minute decisions which drastically affect people's lives."

Universities 'need solvent students'

by Ngaio Crequer

If the erosion of the student grant system was meant to be a move towards loans, the Government should be open and introduce loans immediately, the vice chancellor of Birmingham University said last week.

Professor Edward Marsland said this would be better "than to continue with the running down of the present system which is giving all concerned the worst of all worlds."

He told Birmingham's court that the policy of gradually diminishing the value of student grants damaged individuals and universities. real hardship was experienced by students whose parents, because of the economic recession, were unable to supplement the grants. The reduction in spending power meant that universities, with their own reduced funding, had to subsidize critical areas of provision.

He criticized Sir Keith Joseph, Secretary of State for Education for suggesting that the increase of only 4 per cent in grants was the result of higher education resources being seen as a package including student maintenance and support for institutions.

Sir Keith, he said was "not facing the fundamental fact that a large proportion of that maintenance grant is spent by students on residential and catering facilities provided by universities who are required to ensure that these activities are self-financing an aim which can only be achieved with inflation running at 12 per cent, by increasing fees and prices to an economic level."

A survey by the Committee of Vice Chancellors and Principals had shown that the grant should have been brought up to £1,865 whereas in fact it was only £1.535, 18 per cent less than what was required, he said.

Professor Marsland said that because of the cuts Birmingham would have to shed about 200 academic posts, 18 per cent of establishment, and 300 non-academic staff, also an 18 per cent cut. The random effect of early retirement, redeployment and voluntary redundancy might be so unbalanced as to cause serious problems in teaching and research, he said.

Although council had stated, quite rightly that compulsory redundancy would only be adopted as a last resort, "it would be less than realistic to suggest that we may not reach that position."

NUS submits evidence of hardship

by David Jobbins

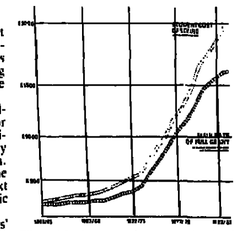
Students this week began a last attempt to persuade ministers to alter their decision to hold the grants increase back to 4 per cent and peg the threshold at which parents are expected to contribute.

Their leaders presented Mr William Waldegrave, under secretary for higher education, with further evidence of the scale of hardship they expect to result from the decision. Student unions throughout the country are completing plans for next week's action designed to win public support for a better deal.

The National Union of Students' submission says: "The Government's actions call into question its commitment to making the mandatory awards system work."

It calculates that on average parents will be asked to pay £100–£150 more next year, and that between 50 and 60 per cent of students on mandatory awards will actually receive less money from local authorities. A further 20,000 students will be drawn into the grants means test as a consequence of freezing the threshold for parental contributions, NUS believes.

"NUS is extremely concerned that access (to higher education) is going to become excessively biased by financial considerations and that large numbers of potential students will be put off by the low level of the grant."



The widening gap between the basic student grant and the cost of living.

In answer to suggestions by Sir Keith Joseph, Secretary of State for Education, that students should take part-time jobs and bank loans to finance their studies, NUS warns: "Supplementary employment (both part time and vacation) is rapidly disappearing leaving them more dependent on a declining grant."

The union says the proportion of the grant taken up by hall fees is increasing and will increase more rapidly next year creating serious financial hardship, increasing pressure on local housing markets, and creating conflicts within colleges.

A survey of hall fees for 1981/82 shows that while the grant rose by only 7 per cent, university charges rose by between 7 and 20 per cent and in the public sector between 15 and 40 per cent. At the most expensive university surveyed, University College of North Wales, Bangor, the cost of hall accommodation including meals was 18 per cent above the notional board and lodging element and comprised 70 per cent of the basic grant; Huddersfield Polytechnic topped the league in the public sector with a cost 29 per cent above the element and reaching 76 per cent of the grant.

At Wednesday's meeting the NUS also pressed home its continued opposition to student loans with an expression of strong concern that the issue has been revived since ministers last agreed that a feasible system could not be introduced. It said that the Department of Education's time and effort should be directed instead to workable projects which would improve the education system.

Backing for the week of action has come from the Inner London Education Authority, which channels mandatory awards to over 13,000 students. Members of its further and higher education sub committee have agreed to a meeting with the London Students Organization next Wednesday.

Social science association is formed

by Paul Flather

The new Association of Learned Societies in the Social Sciences, aiming for the level of influence and prestige held by the Royal Society in the natural sciences, and the British Academy in the arts, began life last week.

Representatives from more than 20 learned societies held a two-hour inaugural meeting in London to elect the first executive, approve a draft constitution, and set out priorities.

The association aims to defend the long and short term interests of the social sciences, filling a vacuum long felt by academics. But the association has decided to make no political interventions until it has built up support, and established its reputation among British social scientists.

Last Friday's meeting unanimously approved a report circulated last October by a working party of eight headed by Professor John Eldridge, professor of sociology at Glasgow University, who was also elected chairman.

The rest of the working party were all elected to the new executive. The key posts of secretary went to Dr Vicky Randall, senior lecturer in politics at the Central London Polytechnic, and treasurer to Mr Malcolm Cross, senior research officer at the ethnic relations unit, at Aston University.

The association will provide evidence for national bodies on the education, training, and research work of social scientists; offer another channel for informed judgments on policies affecting social sciences; and promote social sciences by running lectures and conferences.

Its first specific task is to sponsor a national conference, probably during the summer, to discuss the future of economic and social research in Britain. The executive will also sort out remaining constitutional matters, and plan a newsletter embracing all constituent learned societies.

But the association will not be submitting any views to Lord Rothschild, currently reviewing the work of the Social Science Research Council.

Professor Eldridge said: "The association hopes to provide a major additional voice speaking out on behalf of social sciences. I hope in time we will establish a proper authority among British social scientists.

"Certainly, judging by the wide range of support and the early enthusiasm, everything augurs well. But there is still much to be done before we carry the sort of authority we are aiming for."

St Andrews University chemistry student George Stewart Walker has won a Churchill Travelling Fellowship to study the history, traditions and music of the Hardanger fiddle in Norway. These folk fiddles are now very rare, and all are handmade by craftsmen. Mr Walker, who already plays the violin in the university orchestra, is now teaching himself to play the Hardanger fiddle.

How liberal studies can help unemployed, by Sir Roy Shaw

by Patricia Santinelli

Liberal studies, for too long the Cinderella of further education, must urgently be expanded and transformed through closer links with the arts world, Sir Roy Shaw, secretary-general of the Arts Council said today.

Speaking at the Association of Colleges for Further and Higher Education's annual meeting in London, Sir Roy said every further education institution must have the closest links with its area's regional arts association and through these with arts providers.

He said: "The time has come for Cinderella to go to the ball. Further education must gets its priorities right, even it has to take a lesson from the hard pressed arts world in producing magic on a shoestring budget."

Sir Roy added that a partnership between the arts and education was mutually beneficial. The arts could stimulate and complement existing arts teaching, while education could provide the arts with a more motivated, informed and larger audience.

Liberal studies also had a major role to play in helping the unemployed, as an antidote to frustration, anger and despair. These elements could only increase if those on vocational schemes found themselves still without jobs at the end of their courses.

"We need at least to put in a strong 'liberal' element into such courses, or provide real education for leisure in which the arts would play a major role. By that I mean opportunities to enjoy professional performances and productions as well as to cultivate appreciation of the various arts," he said.

Sir Peter Carey, permanent secretary at the Department of Industry said that the education system was responsible for the poor record our nation had in translating inventiveness into effective products through good design and production.

"Things are beginning to change, but we have a long way to go and time is getting short. Everyone in education needs to be aware of the magnitude of the challenges we face as a nation in the last two decades of the twentieth century," he said.

Sir Peter added that although education had done much to help small businesses owners acquire the necessary skills, it should consider adopting a new approach.

"There is a common need to accommodate the aggressive determination and impatience of those most likely to succeed by providing them with educational facilities solely directed to their own particular business problems."

Managers to study at home

Henley Management College is launching home study courses up to degree level for managers who are too busy to take time off work to attend classes.

The college says this will be the first complete management training scheme available in this country to use advanced distance learning methods.

The first foundation course will be introduced early next year, and followed up with more specialist options. Students will be able to take each course independently, or a series leading to a diploma and eventually a degree.

Home study packs will contain written materials, video and audio cassettes and computer based support backed up by help from college tutors.

Professor Tom Kempner, principal of Henley, said: "We have long been aware that there are managers who would like to attend, and would benefit from the types of course which Henley offers, but who are unable to do so.

1982
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Overseas news

Professors angry at failing exams

from Uli Schmetzer

ROME

Professors who fail proficency tests are causing turmoil on Italian campuses by going on strike, denouncing their examiners and in some extreme cases by taking out lawsuits.

Last month about 6,000 academics failed their tests for promotion to junior and senior professorships, (one in three applicants).

At Rome and Padua they are on strike, on other campuses indignant academics are on a go slow. Hardly a day passes without a protest rally and at Reggio Calabria the entire staff, including the rector, walked out in protest.

Some of the failures are famous academics, others are senior advisers to ministers and government institution. The influential weekly *Panorma* commented: "It was all supposed to be a house-cleaning. It turned out to be a massacre."

Behind the "massacre" is the "*barons*" an academic aristocracy which has for decades wielded dictatorial powers in hiring and firing staff. In 1980 the government passed a university reform law under which university reform law under which junior staff were to be subjected to an examination to reclassify them in three categories – ordinary professors, assistant professors and researchers (the equivalent of lecturers).

The law aimed to break the power of the *barons*, to clear the campuses of fossilized academics and give those who merited it a permanent status.

But the 400 commissions appointed by the education ministry to carry out the examinations were made up almost exclusively of members of the old elite. Vendettas, acndemic disputes, old jealousies and self-preservation are alleged to have influenced many of their decisions.

"Whoever was part of an opposing school of thought was done for from the start," said Angelo Bonzanini a lecturer in sociology at Rome – one of those promoted.

The exams were based on the academic record and work of the applicants. "But there is suspicion that in more than one case the commissions made a clean sweep of bothersome academics, said Guido Martinotti former head of political science at Turin.

Hundreds of the failures agreed with him. The took out lawsuits charging their examiners with "abuse of a public office, fostering private interests while occupying public office and practising false ideologies".

No doubt some of the commission made strange decisions. According to Gloria Regonini of the National University Council the commission for zoology sat for an hour one afternoon to decide the fate of 76 candidates. "Obviously they had decided already who was to pass and who not", she said.

For Professor Carmine Melino, professor of labour hygiene, 267 academic works and three academic textbooks on the subject were judged insufficient to promote him to a senior professorship.

Failure was too much for Salvatore Leone, the elderly director of Palermo's observatory – he died of a heart attack.

Also failed has a veteran engineering academic Diego Gutkwasky, who has taught for 20 years and originated a controversial mechanical theory that bears his name.

Giuseppe Giacalone, one of Italy's best-known commentators on Dante's *Divine Comedy*, alleges his application was turned down because he once failed the grand-daughter of his examiner. He is suing his examiner.

Another professor alleges he was failed by the man whom he beat to a lecturing job once and a sociologist who won a book prize was failed by an examiner whose entry for the same prize was ignored.

Among the more surprising failures were Carlo Vizzini, member of parliament and economic assessor to the Social Democrats and Giancarlo Lonchi, an economist who advises the finance minister on tax laws.

Under the reform law however those who failed have a chance to appeal and be re-examined. Meanwhile, Australian academics are nervously waiting for a government inquiry into academic tenure to conclude. The Senate Standing Committee on Education and the Arts has been holding meetings on the issue in each of the capital cities over the past month. Most representations made to the committee have come down on the side of retaining tenure, if not actually extending it, but dissenters have also had their say.

Professor Hugh Emy, of Monash University's politics department, told the standing committee that between 10 and 15 per cent of university academics were a handicap to their departments and department chairmen had virtually no power to discipline them.

He said universities were unwilling to support action against inefficient staff. In the 20 years of Monash's existence only two tenured academics had been dismissed for incompetence. Professor Emy proposed regular review of academics' performance with panels empowered to recommend early retirement, demotion or dismissal on the grounds of inefficiency.

He also suggested that the length of probation for tenure should be extended from (in Monash's case) three to five years. Lazy and recalcitrant staff should be fined for non-attendance at their duties.

But the chairman of the universities council of the Tertiary Education Commission, Professor David Dunbar told the standing committee that things were not nearly as bad as many people claimed. The commission submitted that tenure was justified on grounds of academic freedom and security of employment, but that it ought not to be universal nor absolute in its application.

The secretary of the Federation of Australian University Staff Associations Mr Les Wallis said academics were being used as "the thin edge of the wedge" in an attack on the job security of public servants.

Military closes Bir Zeit

from Benny Morris

JERUSALEM

The West Bank military government has closed Bir Zeit University for the second time within two months following an assault by students on an official of the area's civil administration. Bir Zeit, now shut for two months, was closed between November and January after repeated clashes on and around the campus between rioting students and security forces.

The new closure was prompted by events beginning when an official of the civil administration's education department, Zion Gabbai, arrived at Bir Zeit for a routine meeting with university vice-president and acting head, Dr Gabi Baramki.

As he left later he was set upon by a group of students and beaten and kicked. Eventually, he drew his pistol and fired a shot in the air. Gabbai fled the campus under a hail of stones and summoned the nearby Israeli garrison, which surrounded the campus buildings.

At a subsequent meeting between Dr Baramki and West Bank chief civil administrator, Professor Menachem Milson, the Israelis claimed that Baramki had done nothing to protect his guest. Baramki countered that he had been hit and pushed aside by the students. The students maintain they assaulted Gabbai as a representative of the civil administration, whose introduction last November they oppose.

Military units demanded that the university's students emerge one by one so that they could identify Gabbai's assailants. The students refused, and eventually the Army agreed to let them out in groups.

However Dr Baramki, and other senior university officials, were summoned the following day to professor Milson's office, where the Israelis demanded that Dr Baramki provide an assurance that in future he would be responsible for the safety of Israeli officials visiting the campus. Dr Baramki reportedly said he was unable to do so "at the present time."

In a subsequent meeting with Colonel Yaakov Hartabi, who is in charge of security in the West Bank, Dr Baramki suggested that Bir Zeit cease to function for one week "to allow tempers to cool." But Major-General Uri Or, and senior Israeli government officials decided otherwise, and promptly issued a two-month closure order.

Dr Baramki condemned the closure, saying the incidents that had prompted it were "insufficient justification".

The closure of the university, the intellectual centre of Palestinian nationalism in the West Bank, sparked riots in various West Bank towns, including Nablus, Ramallah, El-Bireh and Bir Zeit. Some 30 students and other residents were briefly detained, as well as two American lecturers teaching at Bir Zeit. The authorities are now considering whether to deport the two Americans.

Move to ban council elections

from A. S. Abraham

BOMBAY

The chairwoman of India's University Grants Commission Dr Madhuri Shah, has created a furore in student union circles throughout the country by suggesting that representatives to student councils be nominated on the basis of academic merit rather than elected in fiercely partisan and expensively financed elections.

Student councils are a vital feature of the democratization of university governance.

Dr Shah said that during her first year in office, large numbers of students she had met had complained that they could not get on with their work because of frequent turmoil caused by campus election campaigns. She had the impression that candidates, backed by political parties, spent huge sums on elections and that lawlessness and violence, arising out of election competitiveness, persisted "at the cost of a majority of innocent students longing for higher studies".

She felt that if scholastically brilliant students from different streams could be nominated to the councils, the campus atmosphere would become "more congenial to academic pursuit".

Organized student reaction has been almost unanimously critical of Dr Shah's proposal. The Delhi University Students' Union has said that the UGC wants to scrap elections to be able to "nominate students owing allegiance to the ruling party", ie, Mrs Gandhi's Congress-I. The students' Federation of India, the student wing of the Communist Party of India believes that student elections are the "only means students have of uniting and fighting for their rights".

Commission chairman takes over at national university

from Geoff Maslen

MELBOURNE

The chairman of the Australian Tertiary Education Commission, Professor Peter Karmel has been appointed vice chancellor of the Australian National University. He will take over from Professor Anthony Low in the middle of the year.

It is another feather in the cap of one of the country's most highly respected academics. Professor Karmel has occupied senior government positions for the past 11 years, first as the fourth chairman of the Australian Universities Commission and since 1977 as the foundation chairman of the Tertiary Education Commission.

Professor Karmel: key post

Professor Karmel is also known for the famous Karmel report on schools in 1973 and the report on Open Tertiary Education in 1974. His departure from the TEC will give the government an opportunity to put into effect its plans for a review of the commission's structure and operations.

Meanwhile, Australian academics are nervously waiting for a government inquiry into academic tenure to conclude. The Senate Standing Committee on Education and the Arts has been holding meetings on the issue in each of the capital cities over the past month. Most representations made to the committee have come down on the side of retaining tenure, if not actually extending it, but dissenters have also had their say.

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Students flee 'battlefield' campus

from Craig Charney

JOHANNESBURG

Uneasy calm has returned to the National University of Lesotho, which last year became a battlefield in the country's "little civil war".

The second half of 1981 saw death threats, clashes between supporters of different political parties, and government criticism of officials at the small campus at Roma.

These scenes were played out against the background of increasing violence between the Basotho National Party government, which has ruled dictatorially since it suspended the 1970 elections, and the Basotho Congress Party, which aims to overthrow it.

"What has been happening here is part and parcel of the history through which our country is passing," said vice chancellor Anthony Setsabi in a report on campus violence. He received a death threat last July, and registrar James Putsoane received another in November.

In November, pro-government students seized the students union building in an attempted coup against the pro BCP students representatives council. They ignored pleas to leave from the university senate, and only did so after the High Court ordered them to.

During this incident, SRC president King Moloi and vice president Mothusi Lekalake fled the country, following death threats from the pro-government hit squad. Soon after the government deported one of their allies, Ugandan student Ladu Gore.

University officials were also criticized by education minister B. A. Tlelase for keeping quiet in the face of BCP attacks and student criticism of the government. On the last day of the year, a bomb was discovered and defused on the soccer field.

Polish students win backing from the church

Poland's banned Independent Students' Association (NZS) last week celebrated the first anniversary of its legal registration with a special mass in Warsaw.

It happened at a time of increased tension between the Roman Catholic church and the ruling "Military Council of National Salvation", with priests being accused of showing too much support for Solidarity and acting as "postmen and gossipmongers" between internees and the outside world.

The university chaplains who decided to hold the mass appear to have had two motives. On the one hand, they clearly wished to show support for the NZS, which had always had strong ties with the church, and which had campaigned, for example, for degrees granted by the Catholic University of Lublin to be given parity with state degrees when graduates applied for jobs. At the same time the support will have done much to defuse the growing alienation between young people and the church. Reports reaching the West indicate that an increasing number of young people are dissatisfied with the appeals of the Polish hierarchy that no more Polish blood be shed, and to be talking of some form of resistance beyond the passive type urged by Solidarity.

The tension is greatest in those areas – Gdansk, Wroclaw and Katowice – where the outlawed "Confederation of Independent Poland" (a militant group which seeks the breaking of all political and military ties with the Soviet Union) has its strongest support.

The chaplain's sermon to the NZS was moderate in tone, and concentrated on moral survival. Nevertheless, by stressing the necessity of living an independent life he effectively backed the NZS's platform, granted a year ago at Lodz, and nor evoked by the generals, of a higher education system that included a multiplicity of outlooks.

The chaplain praised the "many good achievements" of the NZS, and called on all students not to be blinded by half-truths, but to "seize and mould the future, and not withdraw into apathy".

Meanwhile, the security forces are clearly apprehensive of a major outbreak of student unrest. A government leaflet specifically warns young people against "political provocateurs" who are trying to stir up a "fratricidal war", and who are "being prodigal of your life and health and the life and health of your brothers and mates in uniform".

New prescription for doctors

The West German committee of vice chancellors has proposed a radical and long overdue change in the system of allocating places to medical students. The main criterion, it is suggested, should not be the performance in the *Abitur* (the A level equivalent) but rather the candidate's all-round suitability for a medical career.

This would be assessed during a preliminary six-month period of practical experience in a hospital or a doctor's practice as an assistant or orderly. Afterwards the candidate would be tested.

Because of a shortage of places in the medical schools, only applicants with the highest *Abitur* results can rely on admission without waiting. Under the new system applicants with average results would stand an equally good chance of getting a place, assuming they made a favourable impression in their practical activities.

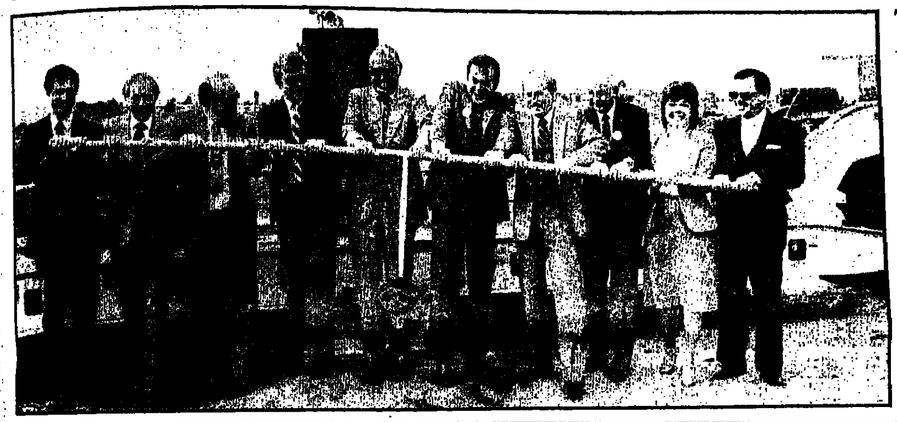
The scheme requires the approval of the ministers of education of the *Lander*, the states. Some opposition from the medical profession is expected on the grounds that this will mean an intolerable extra burden on overworked doctors and nurses.

Mexican clash

The Mexican education minister, Fernando Solana Morales, has claimed that illiteracy in the country will be cut from the present 17 per cent of the population to no more than one or two per cent by 1988.

But Henrique Gonzalez Casanova, a member of the governing board of the National University of Mexico, challenged this official view by declaring that high levels of functional illiteracy still existed in Mexico.

North American News



The best way to break new ground

When they do things in America, they do them big. Here a special 10-man spade is used to break ground at the site of a new headquarters building for Coastline Community College in California.

The College, which opened in 1976, draws over 30,000 adult part-time students a term – but it has no campus. It holds classes in buildings such as schoolrooms, commercial premises and recreational centres and also offers television courses.

At the handle of the spade are shown the President of Coastline, Dr Bernie Luskin (fifth from right), with members of the board of trustees and senior college officials.

Financial interests must be declared

from Deborah Kasouf

WASHINGTON

Concern over financial links between university researchers and private companies in the genetic engineering field has prompted a California state commission to approve a conflict-of-interest regulation for academic researchers.

Although many universities have their own procedure in conflict-of-interest cases, the California commission's action is the first attempt by a government agency to deal with the issue.

Professors in California's public universities were previously exempt from the state's strict conflict-of-interest law. This requires all government employees who take decisions to disclose financial interests which could conflict with their professional interests and to disqualify themselves if necessary.

The commission originally exempted professors because they did not think it likely they would make government decisions, according to Mr Thomas Houston, chairman of the fair political practices committee, which adopted the regulation. "But since then we have had evidence of cases where conflicts could arise, particularly in the area of genetic engineering," he said.

The commission was concerned that professors who were on the payroll of or doing consulting work for a gene-engineering company might put their private financial interests above the public interest by withholding results from other companies or letting those interests determine the type of research they selected, according to Mr Houston.

"This area (genetic engineering) has developed so rapidly that normal protections don't apply. It's the wave of the future and instant, huge profits can be made," he said.

If the regulation is formally approved next month by the state's office of administrative law, it would require scientists who do public university research funded by a corporation to report any financial interest they have in that corporation. The university would then be required to form an internal review panel to decide whether or not there is a conflict of interest.

"If we find that a professor has not disclosed a conflict of interest, we will be able to take him to court," said Mr Houston.

Although the University of California has said public disclosure by its professors could violate academic freedom and has proposed handling the issue internally, with professors making disclosures within the university, commission members feel that government involvement is necessary.

"We are making it part of our regulations, as opposed to leaving it up to the university, because unless there is some penalty, there is no incentive for professors to disclose the information.

"But we will not interfere with the university review panel's decision; we are very conscious of academic freedom," he said.

Mr Houston stresses that the regulation will mostly concern research in chemistry, biology and computers, and currently would affect "somewhat less than 5 per cent" of the total money going into research in California's public university system.

"We are dealing with this issue in very incremental steps and we intend to review it after a year to see if we've gone too far – whether we've impaired the University of California's ability to attract professors or to compete with other universities – or if we have not gone far enough," he said.

Stanford agrees to Umnov visit

from Peter David

WASHINGTON

Stanford University and the State Department have agreed to allow a leading Soviet robotics expert, Dr Nikolai Umnov, to visit the university in the spring.

Dr Umnov's visit, sponsored by the National Academy of Sciences, had been threatened by a disagreement between the university and the government over the strict limits which the State Department wanted to impose on his activities.

In December the department told Stanford that Dr Umnov should be permitted no industrial visits and denied access to research funded by the defence department and to programming techniques for robots.

Stanford reacted fiercely to the restrictions. In a letter to the National Academy the university refused to comply with restrictions it regarded as "absurd".

Last week, however, Stanford said the State Department had clarified its restrictions in such a way as to enable the university to welcome Dr Umnov, after all.

Following negotiations between the department and the academy, the restrictions applied to Dr Umnov have been slightly relaxed. He will be prohibited from visiting industry, but the university will not have to enforce that prohibition.

In addition, Dr Umnov will have access to research "intended to result in openly available documents or for presentation in lectures, seminars or other academic forums."

Mr Gerald Lieberman, dean of graduate studies and research, said the new version of the State Department restrictions would not inhibit Dr Umnov's access to any research at Stanford, which conducts no classified research.

He added, "the university is not being asked to monitor his activities off campus. With these clarifications, Stanford would be pleased to have Dr Umnov as a visitor."

The agreement over Dr Umnov has not, however, ended a debate over the extent to which American expertise should be concealed from foreign scholars.

Science council founded

The White House has announced the creation of a science council to improve national coordination of the United States research effort. The move comes a week after unveiling a 1983 budget in which science fared better than other areas of national spending.

The White House Science Council is to be chaired by Mr Solomon Buchsbaum, executive vice president of Bell Laboratories. It will meet six times a year and report on major science issues to Dr George Keyworth, President Reagan's science adviser.

Creation of the council marks the restoration of the White House's science coordination machinery which was dismantled by President Nixon who felt scientists had become hostile to his administration's policies.

President Nixon abolished the Presidential Science Advisory Committee established by President Eisenhower and dismantled the White House Science Office established by President Johnson.

In 1976 President Ford re-established the Johnson Science Office as the White House Office of Science and Technology Policy, headed by a presidential science adviser.

The new Science Coucil, however, will not report directly to the President as its predecessors did but to Dr George Keyworth.

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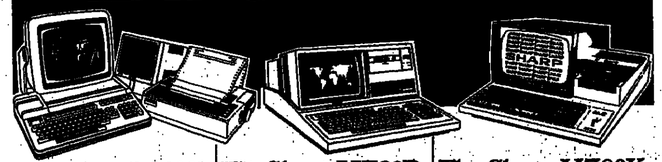

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BRIEFING

Around 12 per cent of new graduates will still be searching for their first job by the end of the year although prospects are not altogether gloomy. Paul Flather, David Jobbins and John O'Leary report.

Job seekers learn a flexible approach

Employers and careers advisers at a press conference last month agreed that the employment market for British graduates was probably worse than at any time since the end of the war.

Time will tell if they are right. But some idea of the scale and scope of the problems that now confront graduates is given by comparing the percentages of those still seeking jobs six months after leaving university over the last 20 years.

Figures supplied by the Central Services Unit in Manchester show that in 1964–65 just 1.5 per cent were unemployed at the end of the year. By 1969–70 this had increased to 5.4 per cent, held at 5.3 per cent in 1974–75 after a peak around 1972, and reached 7.6 per cent by 1979–80.

This year, according to forecasts from the Standing Conference of Employers of Graduates (SCOEG), the Association of Graduate Careers Advisory Services (AGCAS) and the Manchester unit for careers and appointments services, the figure will be more like 12 per cent.

This means that six months after graduating about 10,000 graduates could still be searching for their first job: and there are still many thousands from previous years also seeking work.

The three groups point out that while the supply of first and higher degree graduates this year will be about 9 per cent higher than last year, the demand will have fallen by possibly 10 per cent in the past 12 months. This comes on top of a 12 per cent fall in graduates recruited in 1981 compared to 1980.

The picture, while undeniably depressing, is patchy. In the same month that SCOEG found the largest firms to be cutting back most on graduate recruitment, a survey of 12 multinationals in *The Times* revealed much brighter prospects. Unilever, Ford, ICI and Marks and Spencer were all intending to take on more graduates this year.

Similarly, there are wide variations in the prospects for different types of students. Work by the Institute for Manpower Studies at Sussex University, for instance, has shown that electronic engineers will still be in demand this year despite 50 per cent cuts in intake by some large firms. Although they will be less free to pick and choose, the IMS study forecasts rising opportunities during the 1980s culminating in a further shortage of electronic engineers when the economy picks up.

The reason is the spread of new technology and especially the impact of microelectronics. It is the prime example of a field which should withstand the general contraction of the graduate labour market. The oil industry, too, is judged to be buoyant, while the retailing and commercial sectors are stable.

It also remains true that more companies are continuing to join the search for graduates even though the total number of jobs is declining. While the number of firms with 100 or more vacancies dropped from 7,000 to 4,000 in the latest SCOEG survey, opportunities with smaller concerns held up much better. An IMS study last year showed that small companies had increased their share of the graduate market both by filling jobs which previously went to school-leavers and by taking advantage of the willingness of many students to widen their employment horizons beyond traditional opportunities.

However, Mr Brian Putt, the director of the Manchester unit, who has been studying such statistics for many years now, has no doubt about the seriousness of the current position.

He admits that some of the earlier "horrific" predictions that 1981 would close with perhaps one in five of all graduates still seeking jobs have proved unfounded. But one in seven 1981 polytechnic graduates could be without work now, six or seven months after entering the job market.

Mr Putt readily identifies a change in the attitudes of students facing these grim statistics. He describes them as generally "slightly anxious", usually smartly dressed and much keener to see careers advisers to find out about employment prospects, usually by their second year.

Graduates are now taking over the type of jobs once the preserve of school-leavers. But then the nature of these jobs is now often more complex, and is itself changed once graduates arrive. "If a graduate is recruited into dust collection for example, then you will probably find he will devise a new system of doing the work," he said.

He agrees that there has been something of a stampede towards the more secure professions, most of all into accountancy which last year attracted one in 10 of all university graduates winning employment in Britain. But he adds this is now certainly slowing down.

The best hope for the future he says, is for graduates to develop flexibility. "Few technical jobs required the same skills for more than three or four years. Graduates are going to need dexterity above all.

Mr Bob Porrer, senior career adviser at Leicester Polytechnic has been able to detect evidence that high expectations are being dramatically modified, by the recession.

"Students are being much more realistic. They are not madly applying to hundreds of firms – they realize it is not a very effective way of getting jobs. Instead they are more selective, concentrating on 30 first-class applications rather 100 not so good ones to firms they are not that interested in."

There is a tendency to take a longer term view – regarding the first job as a stepping stone rather than aiming to achieve the ultimate at the first attempt. Sandwich courses and other direct contact with employers had played its part in this more mature attitude.

He said: "It has never been more important for graduates to be adequately prepared for work, not just in terms of academic performance but of attitudes and basic social skills. A lot of students do need help in this direction. For many it may be their first proper interview, and the first time is always somewhat difficult. Certainly students are not always familiar with the right ways of making applications and writing letters."

But he discounts suggestions that students are less well versed in the social skills than in previous decades and adds: "They realize how important it is to present themselves well.

"The market is competitive and I would guess there has been a general upgrading in standards of applications which means everyone has to be that little bit better."

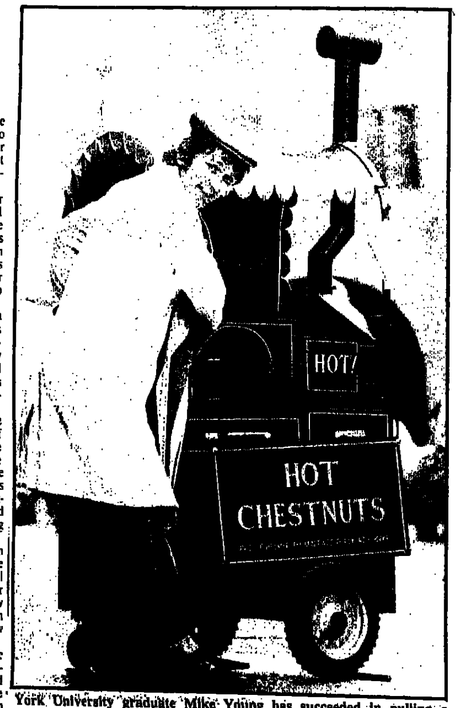
Increased flexibility is nowhere more important than for people whose vocational training has prepared them for the public sector in general – and involvement in capital projects in particular.

A case in point is public administration, which Leicester runs as a degree course and plans to add as an HND soon. Mr Porrer said: "These students are going to find it very difficult and will need to be more flexible. Many will probably get jobs in industry and commerce rather than the public sector."

A by-product of the recession and the recognition of the need to inject new life into decaying city centres and rural communities has been the growth of arts and crafts workshops often underpinned by local government finance. Many fine art students have taken advantage of an opportunity which would have been rare before the recession.

The sense of disillusion shared by students who meet the dead stop of unemployment after three years at university or college is immense.

President of the National Union of Students, Mr David Aaronovitch, said: "I know graduates, unemployed since they left college, who have completely lost confidence in their intellectual and personal ability and are now less capable of undertaking work than before they went into higher education."



York University graduate Mike Young has succeeded in pulling a chestnut from the unemployment fire – by taking up the practice full time. Mike, 25, was out of work for 18 months before he took to the city streets with his cart.

Employers urged not to over-react

Industry has relatively recent experience of sharply declining graduate employment opportunities on which to base its recruitment policies. A decade ago the major employers cut back drastically on graduates in response to a combination of gloomy economic forecasts in the wake of oil price rises and a surplus of qualified manpower.

The recruitment of science graduates, in particular, was severely limited after a reassessment of future needs and increased competition for places following the collapse of Rolls Royce and other technical operations. Large companies which traditionally formed the backbone of graduate recruitment withdrew completely from the "milk round", causing chaos in some sections of the labour market and sending alarm signals back to existing and intending students.

Even sponsored students were denied jobs and science graduates were forced into commerce or the professions. It was not long before industry realized that its over-reaction was mortgaging the future and skill shortages began to become apparent. Indeed, Sir Raymond Pennock, chairman of the Confederation of British Industry, went so far as to send a letter to all CBI members last year reminding them of the damage done by stop go recruitment policies and urging them to maintain their employment of graduates.

Personnel managers agree that Sir Raymond's letter is unlikely to have much effect, but it is widely felt the industry has learnt its lesson. To remember, the speed with which schools and higher education reacted to industry turning off the recruitment tap. Those who might normally have been expected to pursue an industrial career were advised to look elsewhere and, when the economy recovered, not only was there a shortage of skilled manpower but new recruits were no longer easy to come by.

Mr Putt of Manchester quotes the example of chemical engineers "The news that they were no longer needed and that giants like British Petroleum were not recruiting directly from university shot back into the schools," he says.

However, Mr Putt draws a distinction between the "recession" of a decade ago and today's "slump". Not only does he discern a willingness to maintain numbers in preparation for an upturn in the economy but he sees radical changes in the graduate labour market, with different skills in demand and new types of job available, especially in the field of microelectronics.

Mr Terry Dean, of British Aerospace, who carried out the SCOEG survey, is confident that this year's graduates will not encounter the closed doors which faced their predecessors 10 years ago, although they do face struggle to find a job.

And he is anxious that this message finds its way back to careers advisers, "We don't want to encourage any school-leavers to make decisions for three years time on the basis of what is happening now."

Sheffield's self-helpers

Unemployed graduates in the Sheffield region have responded to the slump in employment prospects by setting up a unit to "market" themselves into jobs.

The Sheffield University Graduates Association (SUGA) was launched last October, following a series of questionnaires to unemployed graduates and a well attended public meeting.

SUGA now claims about 100 graduates who make use of its facilities in two rooms loaned by the university, with perhaps 200 more graduates on its books, from the university, the polytechnic, and from other parts of Britain.

The initative came from the university's careers advisers, the students' union, and a former unemployed graduate, Mr Ray Downey, 24, now supported by the Manpower Services Commission for one year to coordinate aid to unemployed graduates.

SUGA is now run by an informally selected committee of the graduates. The association has three distinct aims: to help students make themselves "more marketable", to develop work experience and to act as a social focus.

Lesson for 'raw grads': first sell yourself

Graduates are still not preparing properly for the harsh world of industry and commerce according to a leading private employment agency for graduates.

Ms Ruth Cadby, a group manager specializing in media jobs for Graduate Appointments Ltd, said there are still far too many graduates who have no realistic idea of what going into the business environment really means. She calls them "raw grads".

She said: "So many people who come to us just do not know how to present themselves. They do not know even how to persuade us to see them. Sometimes they are too arrogant, sometimes too reticent. And they don't know how to produce a good curriculum vitae."

The agency opened near Oxford Circus, London, in 1977, and now has 4,000 people on its books. It is currently taking on 70 new graduates a week, but at best hopes to place 10 a week in jobs. Graduate secretaries who are "bright and good" can find jobs immediately. Only the employers pay for the service.

In the past two years the number of people coming to it in search of work has proved quite unplaceable.

Ms Cadby said: "It really is quite tragic." Graduates now can be told to come back in a year's time after gaining some work experience, "We want people with fire in their belly, something that shows they are unusual and have real commitment," she said.

As far as the interviewers in Graduate Appointments Ltd are concerned a good degree is not half as important as personality, effort and a relevant degree.

The agency now has 35 staff, and reports long queues at its office.

FIRST DESTINATION UNIVERSITY GRADUATES

	Graduating			Home employment			Seeking work at end of year			% Unemployed
	Total	Male	Female	Total	Male	Female	Total	Male	Female	
1964–65	27,549	18,730	7,810	10,904	8,288	2,615	407	313	94	1.5
1969–70	47,584	33,342	14,241	17,663	13,627	4,036	2,663	1,870	793	5.4
1974–75	65,473	39,685	18,788	21,706	15,348	6,437	2,944	2,042	902	5.3
1979–80	67,368	42,279	25,089	29,497	19,750	9,867	5,120	3,350	1,770	7.6

Source: Central Services Unit on Information from The University Grants Committee.

No teachers plus no education equals no future. Student teachers protest at the cuts.

Training map loses its way

National planning of the teacher supply is becoming impossible as institutions curtail their courses. Patricia Santinelli reports

When the Government's advisory committee on teacher training finally reports in March, it may well find that the map of teacher education has been radically altered, thus undermining the committee's attempts at national planning.

For in some areas teacher education is under threat both in the universities and in the public sector.

It seems to have been picked as a soft target which can be cut with more or less popular approval, provided this safeguards other departments. Nor is its case particularly helped by the fact that 1981–1983 are the trough years in terms of the numbers of new teachers needing to be trained.

The Department of Education and Science is known to be extremely concerned at threatened developments which might endanger its manpower planning. But the Advisory Committee on the Supply and Education of Teachers which is racing against time cannot speed up its work any further. Its recommendations will not be passed on to institutions until they are made official by the Secretary of State for Education towards the end of the year.

By that time the cases of Bristol and Nottingham may be history. These universities' schools of education are threatened with cuts of nearly 50 per cent and 26 per cent respectively. And it is quite likely that by then Exeter, Manchester, Leicester, Birmingham and Keele will have implemented cuts ranging from 16 to 20 per cent.

In the public sector Bedford, Manchester, Liverpool and Worcester colleges of higher education are having to make cuts. Bedford has to make savings of between £500,000–£600,000, while Manchester is in danger of being amalgamated with three of the local further education colleges.

In the polytechnics. Newcastle is losing its faculty of education, with some of its schools being absorbed in the faculties of humanities and construction, and applied science. In Liverpool, council proposals have put a question mark over the future of I. M. Marsh and F. L. Calder, both specialist teacher training colleges which are due to be amalgamated with the polytechnic.

Other polytechnics such as Manchester and Trent are losing staff through early retirement.

Clearly, if most of the proposed cuts do go ahead, it will make nonsense of any national planning for teacher training that ACSET recommends. The committee stressed earlier that a base for future expansion must be maintained.

In March, it is likely to recommend that teacher training institutions prepare themselves for a major increase in primary teacher training. DES projections indicate that by the end of the decade the demand for primary entrants will have risen from 4,600 to 10,000 to accommodate the needs of schools and although a sharp decrease is indicated in the demand for secondary trained teachers, this rises again in the 1990s.

Another disturbing factor is that many of the universities appear to have willingly overlooked the UGC letters of July and November which imply that education should be protected.

For example, in its July letter the committee advised universities not to touch their education departments until they received further guidance on manpower targets. The letter also says that the UGC hopes that higher degree work, research and courses in inservice training will be maintained and provision has been made accordingly.

In its November letter regarding the PGCE cuts the committee makes it even clearer by saying that it hopes staffing in the departments will reflect the anticipated rise in entrants in later years.

Many departments of education have since then sought more definite clarification from the UGC but this has not been forthcoming. Now many believe that the issue should be debated nationally before it is too late.

Their argument is that of all departments in universities. education should receive the smallest cut to ensure it has the capacity to meet the forthcoming boom.

Professor Ted Wragg, professor of education at Exeter University whose department has been asked to make savings of between £500,000–£600,000, while Manchester is in danger of being amalgamated with three of the local further education colleges.

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Another disturbing factor is that many of the universities appear to have willingly overlooked the UGC letters of July and November which would mean the loss of all inservice training, but there have also been suggestions that the reverse might happen.

At Nottingham, although the 26 per cent which would mean a loss of 11 staff has been sent in proposals to the UGC, there are still plans to discuss the matter further. If it is implemented there is a danger that all courses would be cut back, including inservice training.

At Manchester, Keele, Newcastle, Hull, Birmingham and Leicester cuts are to be effected through early retirement with the hope of avoiding compulsory redundancies, but even this is likely to put some work at risk.

In the public sector it is widely acknowledged that the cuts resulting from the shortfall in the pool allocation will in polytechnics and colleges which are hit result in the loss of some options in initial teacher training courses and a sharp reduction in inservice provision.

The general feeling is that the right fist of the DES has absolutely no idea who its left fist is punching, with the result that national planning in teacher training will be in disarray.

Dr David Shadbolt of Worcester College of Higher Education said: "There is a possibility that in relation to teacher training and national planning, individual institutions will respond individually to cuts, and therefore there is a danger that particular subjects will be cut in an uncoordinated way, which may or may not conform with national strategy."

The loss of options will come directly from voluntary redundancies and means that much less variety will exist than at present, but the kinds of savings faced by Manchester, Liverpool and Bedford Colleges could mean more radical developments.

In the case of Bedford college, it could endanger its primary provision which would clearly be ridiculous in view of the forthcoming boom and the fact that the institution has always met all its quotas.

At Newcastle Polytechnic, the position is slightly different in that the loss of the faculty of education was planned before the cuts and is the result of 21 members of staff taking retirement under Crombie, leaving some 60 staff. But although the polytechnic says that teacher training quotas will be maintained, and that they could easily re-expand when necessary, there are some external doubts that the transfer of the schools to other faculties will erode their work.

The threat to inservice training is more immediate since institutions can choose to discontinue this type of work rapidly at their own discretion, with dire results for all part-time staff – usually a large number is involved in this type of work.

Unfortunately, although in 1976 the DES encouraged colleges to devote two-ninths of their work to in-service, this year's pool allocation is so low that it makes it one of the less viable areas. Again, it appears, the implications and full consequences of certain action by the department does not seem to have been fully assessed.

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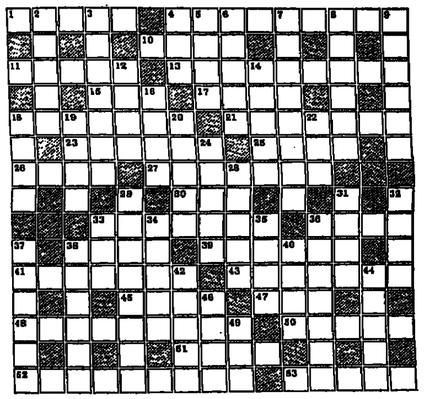

Across
1 Spread unevenly
4 Part of a billion title
10 A mouth, nothing more, in Ireland
11 He won't settle down
13 22 down should be this
15 Cotton onto, so to speak
17 Head of a chapter
18 Denizen of the ultimate ditch
21 Frequently under observation
23 What's in this stands out
25 Flighty word
26 If the end of this gets in the way the whole may result
27 Retinues (anag.)

Down
2 Heraldic gold between mother and me
3 Out of countenance
4 Upset this value and get a sharp reproof
5 Intently watched
6 In some hands the things become trumpets
7 A cellpiece movies
8 This horseman has dropped an h
9 Sounds like a curious song
12 This ought to be square
14 Momentary stoppage
16 Written briefly
18 Calverley's picturesque scholars carved their names on every one
19 Site of 45 across
20 Precedes advantage
22 Parents in a negative way
24 Used to be somewhere in France
28 Happens afterwards
29 Climbing instinct in man
31 A terrestrial glider
32 The final crack
33 The little devil's on our money
35 Disgraceful centres
37 Time measurements
39 Jollier than a scrote
40 Ladies in promising mood
41 Presents are commonly this
46 Gets the boot
47 Makes a plaything with its past
48 Wants confidence
50 A mixed welcome means getting the bird
51 This girl seems to be eating backwards.
52 The man in the moon
53 A pinch of sand will make it dry
10 This means study
33 Simply enormous
36 There's a lot in this voice
37 This elephant has lost his head
39 A turn for the worse
41 Done with a coarse file
43 Red loam (anag.)
45 This rodent's going back
47 Makes a plaything with its past
48 Wants confidence
50 A mixed welcome means getting the bird
51 This girl seems to be eating backwards.
52 The man in the moon
53 A pinch of sand will make it dry

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The crucible of Italian terrorism?

John Phillips reports on Perugia's University for Foreigners which has been denounced as a harbour for international terrorists

All Agca, above, who tried to kill the Pope, was a student at Perugia's foreigners' university where Red Brigaders, on trial above, have support.

The University for Foreigners at Perugia is "a crossroads for international terrorism contacts" between the Red Brigades and foreign subversives who want to destabilize Italy, says a leading judge in Rome.

Judge Ferdinando Imposimato levelled the charge in a report of an investigation into the kidnap and murder of former Christian Democrat premier Aldo Moro. "Perugia is certainly a meeting place and transit point for terrorist organizations operating in Italy to an extent that is cause for profound anxiety," Judge Imposimato, said in the report.

The accusations sparked investigative reports in Italian newspapers. The university, which nestles in the sleepy Umbrian hills north of Rome, was described as "a crucible of terrorism".

Even the low-key communist daily *L'Unita* called Perugia "an ideal environment for the international architects of terror who seek anonymity to prepare to strike our nation dead". Others reacted sceptically, however, challenging Judge Imposimato to prove the allegation.

The judge has promised to substantiate his claim. He has refused to comment further saying he cannot anticipate the results of the major investigation into international links with Italian terrorism that he is heading.

Judge Imposimato has said that several foreign secret services supplied the Marxist Red Brigades, their ultra-left allies The Front Line and extreme right neo-fascist groups such as *Ordine Nuovo* (New Order) with arms and finance in a bid to topple Italian democracy. He named Israel, Iraq, Syria, Libya and the Soviet Secret Service KGB.

Previously a host of politicians including President Sandro Pertini had repeatedly voiced beliefs that Italian terror groups with their ability to survive waves of arrests and jail sentences were backed by foreign powers.

Observers ridiculed the claims as wishful-thinking or an example of the Italian political nation's taste for conspiracy theories and political thrillers.

Judge Imposimato was the first top legal official to make the link. Italians and foreign journalists took note. In a country where politicians have been discredited by a string of scandals the judiciary enjoys a reputation as the last disinterested defender of democratic principles, the only force capable of forcing unpleasant political truths into the open.

To Perugia lecturers at the 12,000-student University for Foreigners said they were upset by the charges.

One senior academic dismissed the claims as "distorted" though he conceded that Perugia, with its high population of foreigners, was "an ideal habitat for terrorists".

The foreigners' university was founded in 1921 to promote Italian culture abroad. It is seen as something of a showpiece of Italy's frequently chaotic and antiquated university structure. Its home is "The Gallenga", a rambling eighteenth-century palace.

The university – Perugians call it the Gallenga after the distinctive building – provides courses in Italian language from elementary introductions to advanced training for those who wish to teach Italian in their own countries.

In addition there are courses in Italian culture, art, history, film studies and etruscology.

In 1980 students from some 140 countries attended including more than 300 from Britain. More than 80 full-time lecturers and professors staff the state-run university.

A further 4,000 overseas students attend the city's other university sited near the Gallenga. It provides normal degree courses and was founded by Roman Catholic monks in 1308.

Many of the students at the Gallenga go on to other Italian universities which are open to virtually unlimited numbers of overseas students if they can satisfy an Italian language requirement.

The presence of foreign students on campuses made itself felt in the 1970s. Political conflicts from abroad spilled over onto the peninsula which hosted thousands of student opponents to the Greek junta of colonels and the Iranian Shah. But there was no indication of foreign participation in Italy's last big outbreak of violence on campuses in the late 1970s when students from the ultra-left *Autonomia Operaia* (Worker's Autonomy) group fought gun battles with paramilitary *carabinieri* police in several cities and Rome University was closed for weeks, after the government attempted to introduce university reform.

In Perugia, supporters of far-away causes from all over the world advertise their presence on the walls of the university restaurant with a huge collage of slogans in Arabic script and colourful motifs of clenched fists holding weapons.

At the nearby faculty of political science somebody has sprayed in red paint a five-pointed star, symbol of Italy's most feared terrorist group and underneath in huge letters the slogan "For Communism. The Red Brigades".

As many Italians see it, the Red Brigades are very much children of university expansion in post-war Italy and the subsequent disillusion with the onset of Italy's economic crisis in the late 1960s which brought massive graduate unemployment.

Three quarters of Italy's official 2m jobless are young people. In the impoverished south of Italy, university lecturers and student union leaders call university a "dumping ground" for the unemployed.

The Red Brigades were founded in 1972 by a group of former Trent University students grouped round Renato Curcio who inaugurated 10 years of political assassination, kidnappings, bank raids and knee-capping. Journalists, policemen and judges were among those murdered.

This year Italian police hunting for kidnapped US general, James Dozier, captured a major suspect who was a former criminology lecturer at Florence University, Giovanni Senzani was described as number one on the terrorist wanted list. He had been an adviser to the Italian justice ministry on prison administration before disappearing a year ago when police alleged he had led the interrogation of a leading kidnapped Rome judge, Giovanni d'Urso, and commanded the Brigades' Rome "column" or cell.

Terrorist experts say that a recent wave of more than 180 arrests of suspected Red Brigades members and supporters shows the urban guerrillas are becoming younger, less experienced and that more of them join straight from school or university, eschewing the experience on the factory floor that marked Curcio's more idealistic generation.

Against this background Perugia's association with terrorism as recorded by police dates back to 1972.

It was then that the Black September group of Palestinian guerrillas gathered in the city, enrolled at the Gallenga and planned the attack on the Israeli athletic team at the Munich Olympics.

In 1981 the Gallenga unwittingly admitted its most infamous student, the Turkish would-be assassin of Pope John Paul II, Mehmet Ali Agca.

Investigators had thought Agca's enrolment was a ploy to provide him with a plausible explanation for his stay in Italy. But Judge Imposimato, in the court document, called the Foreigners' University "the last stop" on a conspiratorial trail pursued by Agca that unnamed "other terrorists" had followed.

Soon after, interior minister Virginio Rognoni announced that 26 foreign nationals had been expelled from Italy last year on suspicion of involvement with terrorism.

Six of the 26 had been Libyans based at Perugia. Police said five of the six were alleged to have sought to kill compatriots who refused to obey Colonel Moammar Ghdaffi's orders to return to their country. Late last month, another six young Arabs were expelled from Italy after police raided their Perugia flat and found 30 guerrilla training manuals.

Their case has been adopted by the Rome office of the Palestinian Liberation Organization. A PLO spokesman said that the Arabs were not involved in terrorist activities and that the manuals were publications freely available in battle-torn Middle East countries such as Lebanon for civil defence purposes. It was therefore "natural" for the publications to be carried by the youths.

Rector Ottavio Prosciutti issued a statement saying: "If the terrorist trauma has a central nest in our city or in our university it is for others to prove it, we will continue to collaborate so that such verification can be documented and to prevent the dominance of emotionalism and summary judgments."

Recently Professor Prosciutti was taken ill and Alberto Mazzetti, prorector of the university has been running the Gallenga in his absence.

"We are unhappy because the university's reputation is suffering amid distorted accounts in the Italian press," he told me. "People outside think Perugia is a terrorist centre bubbling with subversion but it is very peaceful here," he added. He acknowledged that Perugia was "an ideal habitat for terrorists". But he added, "If a terrorist hides in a crowded church it does not mean you can say the church is implicated in terrorism."

Now university authorities and police are cooperating to try to prevent bogus students registering at the university. Local police have set up a special sub-office between the students' coffee-shop and the registrar's office. Police officers quiz students as they enrol for courses though they admit there is little they can do if documents appear to be in order.

They recall how Ali Agca registered with a valid passport in another name and paid the 40,000 lire (£18) fee for a three month course in Italian. He attended just one day of lectures before leaving for his attempt on the Pope's life.

At the local police headquarters Alberto Speroni, the policeman in charge of the "foreigners' office" which issues visas to students and surveys them in liaison with the *Digos* (the Italian version of the special branch), admitted that he could not keep tabs on all politically motivated students.

"Perugia seems an island of peace," he said. "The reality is very different."

But asked if he thought the city was a centre of subversion, Speroni would only say he thought it was "possible".

A more pressing problem, he said, was the increased drugs trade which is the bain of universities all over Italy. Hardly a day goes by without a report of a young addict's death.

In the Gallenga, students' reaction was mixed. One Australian student said: "The teaching is excellent though the atmosphere has been soured by politics."

An American student agreed, adding that she thought "Probably there are students interested in terrorism, why not? there are plenty in San Francisco." Most, however, said they were in Italy to learn the language and resented the implications of the Imposimato inquiry. "One of the advantages of Italy, as many of us see it, is that we are free to study with less police interference than we might have at home," and African student said.

In Rome, officials at Imposimato's headquarters were unable to say when Judge Imposimato planned to make a trip to Perugia to conclude the investigation.

The judge has appeared unruffled by critics who demand immediate proof of his accusations. He has said they were based on statements by terrorists who had turned state evidence.

Acting on an anonymous tip the police Judge Imposimato ordered police divers to search a lake near Hadrian's Villa to the east of Rome.

Ten days later frogmen found the chain-bound corpses of two men identified as former members of the ultra-right *Ordine Nuovo* terrorist group.

One of the two had a police record for dealing in heroin. Judge Imposimato had learned he also dealt in arms smuggled in from the Middle East and that his clients had included leftist groups as well as neo-fascists.

What seems clear is that the journalists and observers feel the weight of evidence linking Italian terrorism to foreign secret services constitutes a strong case for the Imposimato thesis.

One theory is that as the Italian Communist Party went its own way from Moscow, as witnessed in recent denunciations of the Polish crisis, it was convenient for foreign powers to subsidize the Red Brigades. The Brigades announced their entry on the international scene with the assassination General Dozier, a move interpreted as an attempt to sow discord between the US and its NATO allies.

And as the theories abound and new disturbing facts emerge a number of Italian commentators have warned of the dangers of xenophobia and possible witch-hunts.

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Tutors to the teachers

Helen Patrick, Gerald Bernbaum and Kenneth Reid report on the characteristics of staff in university education department.

Universities in England and Wales have been training teachers for 90 years. With a few exceptions, their main concern has been training graduates, and today 30 departments of education have about 5,600 students on PGCE courses. While in 1976 11 per cent of all teachers who qualified came from university departments of education, most of them being postgraduates, recent developments have greatly increased the proportion of new teachers emerging from both university and public sector PGCE courses in comparison with the BEd degree. By the late 1980s it could be that as many as 70 per cent of all new teachers will receive the PGCE. Thus, the universities' share of the albeit reduced teacher education market is growing, and it is of increasing interest to know more about all aspects of the university PGCE, including the staff who teach on it.

In 1979, as a result of discussions with the Universities' Council for the Education of Teachers, the Department of Education and Science funded a research project, based at Leicester University School of Education, to inquire into the PGCE in university departments of education in England and Wales, and as part of this project a questionnaire survey was made of all teaching staff in the 30 PGCE departments. From 1,255 staff, 762 (61 per cent) usable replies were received, a figure which represents a somewhat higher proportion of those with PGCE responsibilities, as non-response rates were higher among staff who did not teach on the PGCE. Our analysis of the results of the questionnaire suggests that members of education departments form a distinctive group within the university teaching profession.

Unlike most university departments, education departments recruit the majority of their staff from the ranks of secondary school teachers. Throughout the period since 1970, during which more than half of the education staff have joined their departments, more than 40 per cent of all teachers in secondary schools have been women, yet the proportion of women on education staffs is only 17 per cent. Nevertheless, even at this level, education departments are less male dominated than university teaching generally. Education staff also differ in being considerably older than their colleagues in other subjects. In 1978, 73 per cent of education staff were 40 or older, compared with 54 per cent of all university staff. In our survey the proportion of education teachers who were 40 or over had risen to nearly three quarters, and over a quarter had already, in 1980, had their fifty-first birthdays.

Perhaps surprisingly, since they are largely recruited from the school teaching profession, education staff do not differ greatly in social origins from their university colleagues. Williams and his associates found that about one third of all university academics originated in the working class, a proportion which is a little higher than that suggested by other studies but which reflects our own findings for the education tutors. Professors of education, however, are more likely to be of working class origin than their peers in other departments. Though the numbers are small, this finding does merit comparison with other work which suggests the same of secondary school headmasters when compared with male secondary school teachers. As might be expected, however, three quarters of education staff received the main part of their secondary education in grammar schools and a further 15 per cent in independent schools, and like their colleagues in other subjects, nearly one quarter read for their first degree at Oxford or Cambridge.

Naturally enough, most education staff have had considerable experience of work outside the universities. More than 90 per cent have taught in schools, or further education. The majority of these have taught for five years or more and have been promoted in schools to headships of departments or even more senior posts. Most have taught in secondary schools, with just over half having worked in grammar schools and nearly 30 per cent in comprehensives. In addition, almost 20 per cent have taught children of primary school age. They thus bring to teacher training substantial experience of teaching in schools. Further, six out of ten have taught in other institutions of higher education, mostly colleges of education, before joining their present departments. More surprisingly, 40 per cent have had full-time employment other than teaching, in activities ranging from professional work such as engineering, psychology and administration to unskilled work such as labouring.

As well as this variety and range of experience, education staff have good academic qualifications. Three quarters have a first or second class honours degree, half have a master's degree and more than a quarter possess a doctorate. These figures might not be as good as university staff generally, but they must be seen in a broader context. First, the reorganization of teacher education in the 1970s resulted in a number of departments amalgamating with colleges of education whose staff were less highly qualified. Second, while other university staff were collecting higher degrees, education staff were accumulating the teaching experience necessary for their present responsibilities. Third, the paper qualifications of education staff appear to be improving. In the 1960s, Taylor found that only 18 per cent had doctorates. Today the figure is 27 per cent, and a further 13 per cent are registered for PhDs. Moreover, recently appointed education staff are more likely to possess a doctorate than those with longer service. The number of higher degrees held is the more surprising when one considers how many were unable to study for them full time, over half of those with a higher degree having obtained it on a part-time basis. Such higher degrees are in a variety of subjects, and many education staff are highly qualified scientists, linguists and historians, while more than three quarters of university education staff have completed a course of teacher training.

One of the problems frequently associated with teacher education, however, is the apparent mismatch between the qualifications and experience of the staff and their current teaching responsibilities. It can sometimes be the case that the diffuse nature of teacher education, and the contingent accidents of career, combine to move staff into areas where they lack formal qualifications or experience. A recent DES-funded study of public sector institutions shows, for example, that even where students were being prepared for nursery or primary school work the majority of their tutors were secondary school specialists. The evidence from our own respondents, however, shows clearly that in universities the very great majority of method staff is employed in specialist areas in which they possess both qualification and experience. Thus, more than 90 per cent of the method staff preparing students for secondary school teaching have a first degree in the subject area for which the students are being trained. In addition, more than 90 per cent had taught that area when they were practising schoolteachers. Similarly, more than 90 per cent are training students for the same age range of secondary pupils which they had taught as schoolteachers. In addition, for those staff preparing students for primary schools or for other specialist fields such as music, art and PE where first degrees were less readily available 20 or more years ago (when our respondents might have expected to obtain their initial qualifications) we find more than 90 per cent have other specific, named qualifications (frequently up to master's level) in those areas, and have taught their subjects to the relevant age ranges in schools. In keeping with these figures it is interesting to note that almost 40 per cent of our respondents claimed to be teaching, at least on an occasional basis, in local schools. For method staff only this proportion rises to 50 per cent.

The practical nature of much education work is further supported by the extensive responsibilities which tutors have for the supervision of students in schools. Our work shows that those with such duties are responsible on average for 12 students; each of whom receives an average of five visits on teaching practice. There is also a heavy burden of administration with a variety of courses to organize, school practice to arrange and numerous contacts to maintain with national and local bodies, GCE examination boards, local education authorities, schools, research bodies and professional associations such as NATE. Like the engineers described by Startup, education staff have a wide range of external contacts which are valuable for their work. The staff, in turn, with their wide knowledge and expertise, are frequently involved in offering themselves as a resource to the teaching profession. In addition, many education tutors have responsibilities on the PGCE for a variety of professional and theoretical courses relating to the study of education, and also have complex teaching and administrative responsibilities in respect of the wide range of advanced and in-service courses which all university departments of education offer.

Like all university teachers, education tutors have an obligation to publish and to undertake research. Although more than 80 per cent think that the actual balance of their work lies in teaching, two thirds of our respondents claim to be actively involved in research (20 per cent are engaged in funded research) and their publications record is not insignificant. Almost half have published university texts or individual works of scholarship, more than a quarter have published school textbooks and over 80 per cent have published at least one academic journal article.

Staff in education departments may, nevertheless, have some grounds for feeling aggrieved with respect to their career prospects. In the 1960s, Taylor made the point that opportunities in education for promotion were poorer than in other departments in universities. This is just as true today. According to UGC figures, more than 12 per cent of all university academic staff are professors, and 25 per cent are readers or senior lecturers. In education, the corresponding figures are 7 per cent and 19 per cent.

It is to be hoped that, as national policy is likely to involve a greater proportion of new teachers being trained through the PGCE, those responsible for the accumulation of individual institutional decisions on resources and careers will recognize the characteristics of staff working in teacher education. There is a risk, over the next few years, that the necessity to make financial savings combined with the age structure of education staff will, in the absence of coherent national or regional planning bodies, produce disproportionate suffering in teacher education in both universities and public sector institutions.

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Philip Pettit on Soviet propaganda

Getting the rhetoric right

There is a puzzle about the way in which Soviet self-justification is conducted. In order to see the puzzle I would like you to go through a little thought experiment. Imagine you are a Martian and that someone describes for you the rival models of society represented by the Soviet Union and the United States. You are told how things are in each system, and how they came to be so. Consider now how you might begin to justify the competing dispensations.

On the one side you would count the blessings of a planned, paternalistic society, providing systematically, if not always successfully, for what are seen as people's needs. On the other you would catalogue the benefits of a society where people pursue their goals in relative independence, and where the state presides over the competition with a view to limiting its worst effects. In the first case you would probably speak of the servicing of human needs, in the second of the respecting of human rights.

If you go along with this, then you are in for a surprise. The fact is, as you will quickly recall, that the Soviet Union is not content to allow Western countries a monopoly on the rhetoric of human rights. On the contrary, it appeals to that very rhetoric, and says little of needs and their fulfilment, in its basic documents of self-legitimation, particularly in its constitution. The puzzle is, why should this be so? Why should the Soviet Union try to justify its system in a language which is apparently much better suited to the systems of capitalist countries?

In pondering this question I found it useful to rehearse some platitudes about legitimation. Here are three relevant principles: I think that I first heard them spelled out in a talk by Quentin Skinner. One, any novel social group or force, if it is to guarantee its preservation, must make itself respectable or legitimate in the terms of the community where it appears. Two, in order to do this it will have to make use of terms which are already employed and endorsed within that community. Three, in order to fashion those terms to its own purposes it will have to work at a transformation of their meaning: it would be miraculous if established terms could serve those ends without a refashioning.

It transpires that these points apply to the Soviet Union, and that they serve to resolve our puzzle. Why should the USSR use the language of rights in a document of self-justification such as the 1977 constitution? The answer comes in three parts, corresponding to our three principles: because it wishes to justify itself, not just to Marxist-Leninists, but to the full international community, including the community of its different nationalities; because the language of rights is the only internationally accepted medium of legitimation, and is the medium most likely to be used in criticism of the Soviet system; because it is possible so to transform the meaning of terms in this language that they serve to buttress the sort of regime found in the Soviet Union.

Of these claims it is the last which calls for elaboration if our puzzle is to be seen to be resolved. I came to recognize its validity in the course of a recent seminar on Soviet-British points of view. I had always been aware of ambiguities in the notion of rights but what I realized for the first time at that seminar was that one particular ambiguity marks a systematic divergence in the discourse of East and West.

The ambiguity in question is between rights in the sense of liberties and rights in the sense of what might be described as securities. Roughly speaking, a liberty is a right to take a certain course of action, a security is a right to enjoy a certain form of treatment. Liberties are exemplified by such rights as those of speech, association, publication, assembly and immigration; securities by rights like those to education, medical protection, housing, employment and social security. The distinction between the two sorts of rights is an elusive one to spell out philosophically but intuitively it is an easy one to draw, at least in general.

On every reading of the Western conception of rights, while securities may be admitted, it is liberties which hold pride of place: liberties represent the home ground of the concept, securities a marginal, and perhaps dubious, extension. On the Soviet conception, as I now see it, liberties are displaced and securities are promoted to become the paradigms of human rights. The displacement of liberties is achieved by the argument, implicit in the constitution and explicit in official commentary, that without state provision of the means which ensure that they can be exercised, liberties are the privilege of a few. The promotion of securities is attained by the observation that state-backed liberties are tantamount to securities, so that securities are the only effective rights there are. If the right of publication is seen as the right to be provided with the mass of expressing one's opinion it becomes indistinguishable from the right to education or housing or employment: it becomes a right to treatment, not a right of action.

The Soviet redirecting of the discourse of rights has the effect of disarming the propagandists of Western countries and of strengthening its own ideological defences. No wonder that, speaking from within the restructured language, defenders of the Soviet system are willing and anxious to measure its success by the touchstone of rights. On the Western side this willingness is often represented as brazen cynicism but such a response reveals a failure of understanding. It is not brazen or cynical to hold that the Soviet Union scores above Western countries in its overall concern for human rights, nor is it understood that human rights are more or less equated with securities.

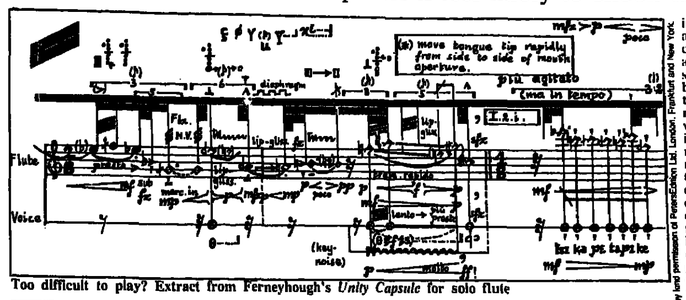
Our puzzle is resolved, but one further point is worth noting. This is that the definition of rights by reference to securities may explain the (official) Soviet attitudes towards dissidence. Given that rights are securities it follows that the state is the provider of rights; given that it follows that any radical questioning of the state can be depicted as a threat to the rights of others. If we now add the principle that one can exercise one's own rights only within the constraints set by the rights of others – with regard to liberties each of us would be ready to do so – then the conclusion follows that dissidents are trespassers against the rights of their fellow citizens. Not a sensible piece of dialectic but it has a good deal of psychological force.

It is important to recognize that East and West speak different languages when they use the common vocabulary of rights. Recognition of this is a precondition of mutual understanding. What may well be asked, however, is, which language is the less biased, which has the better critical credentials. In answer to this question, rights-related concepts offer an imprecise and precarious basis either for the criticism or legitimation of social forms. The popularity of the currency may be a mark of its basement.

The author is Professor of Philosophy at the University of Bradford.

Judith Weir shows why the new generation of composers is less likely to shock than the one before

The well-tempered composer



Too difficult to play? Extract from Ferneyhough's *Unity Capsule* for solo flute

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In our retrospective musical world, where Schoenberg's music is "too modern" to be included in normal concert programmes, it may seem premature or even superfluous to think about the music being written by composers presently in their twenties and thirties (Schoenberg was born 108 years ago). Probably the latest composers a classical musical enthusiast can be expected to have heard of are those angry young men, Stockhausen, Boulez and John Cage who are this year respectively 54, 57 and 70 years old. Oddly enough, while the upper age limit for being perceived by the public to be a young composer is thus rising steadily, the actual age at which composers begin their professional careers seems to be getting even lower. Of course, there have always been composers whose gifts were recognized early – Britten, for instance – but recently, notably in Britain and West Germany, there has been a significant number of composers who have been published and internationally performed from their early twenties onwards; and it seems therefore not too early to ask what this newest music is like, and what further surprises await us in the concert hall.

Surprise is not in any case an emotion that comes easily to the seasoned attender of contemporary music events. But the youngest generation of professional composers seems to be an unusually non-shocking, well-behaved one, quietly interested in technical problems and in "humanizing" the styles of the last 30 (or in some cases, 70) years. Some would say that this is how you have to behave to be a widely-performed young professional composer, because in this area of music nearly all roads to performance eventually lead back to the Arts Council and the BBC; and in fact these institutions, particularly the Arts Council in its Network tours of new music, are clearly anxious (still others would doubtless say over-anxious) not to be seen falling behind the trends.

Certainly, though, it's difficult to think of a time when musical conservatism has been presented so stylishly, with such chic, even. We are all used to the idea of deliberately unfashionable composers, doggedly carrying on in the face of the prevailing "informed" artistic climate. And there have been many composers who write in a conservative style as a result of being removed from the latest developments by reason of geography, national ideology or old age. But the emergence of a set of fashionable, well-informed 30-year-old conservative composers must be a new one on most of us.

The youngest composers of West Germany have been much referred to as "new romantics", which does not exactly mean that music is begun to sound like Brahms again. In the case of arguably the most prominent of these composers, Wolfgang Rihm (b. 1952) the term presumably refers to the succession of simple, clear-cut gestures which make up the style for which the nearest precedent is imagined to be late nineteenth century music. (Although in Rihm's case, the gestures are so sudden and violent that the expressionism of Schoenberg and Berg is brought to mind, albeit much slimmed down.) Those whose allegiance to the modernist movement is still intact denounce the music as "pastiche", but it has been quickly elevated to considerable importance in German concert life, and critics there have even compared Rihm to the young Richard Strauss.

The style is not mere nostalgia but it is perhaps the latest in a chain of reactions to music's "new beginning" after the Second World War. Of the young composers who began work then, the majority has spent what would have been their student days under Nazi occupation with practically no opportunity to hear, let alone produce, music of a progressive nature. After 1945, through generous state support (from radio stations, universities) an era of extreme experiment was inaugurated by those (including Boulez and Stockhausen, at that time genuinely young composers) who believed with some historical justification that they represented a completely new beginning. Among the fruits of their experiments was the emergence of "integral serialism" (a development of the most modernist line available in prewar music, namely Webern's work) in which all the elements, even dynamic markings and instrumentation, could be subject to the constraints of a pre-compositional masterplan.

This formalist perfection was widely admired, and soon attained the status of an orthodoxy. But by the end of the 1950s the, by now, much-copied system was felt to have only the justification inbuilt logically in itself. Sometimes this view was expressed from a political, often Marxist, standpoint – that this very theoretical, self-regarding music, entirely in the hands of state-funded bodies, was an establishment pet, keeping those things in music that might nurture revolutionary appetites safely out of the way (or, as Cornelius Cardew once entitled a book, *Stockhausen Serves Imperialism*).

Have serialism and music's recent past now been disowned by yet another *soi-disant* historically new generation? Certainly the intense theoretical debates which centred round the influential Darmstadt summer school have cooled down lately (the theme of Rihm's 1980 Darmstadt appearance was that "music should speak for itself") and the weighty journal *Perspectives of New Music* that issues from serialism's occident, Princeton University, has lately become almost readable enough for the dentist's waiting room. But among those composers who do not take extreme theoretical stances (another of those "silent majorities"?), I suspect there is a feeling that most musical techniques could be pressed into service at some time or other; in other words, sitting on the fence has its beneficially creative side. This seems to be especially the case in Britain, where aesthetic debate has never caught on as a national pastime. The so-called Manchester school (Goehr, Birtwistle and Maxwell Davies), all of whom experienced the heyday of Darmstadt and Princeton, managed to develop greatly admired individual styles – and to maintain development without the creative hiccups that later assailed Boulez and Stockhausen.

And there are younger British composers who make use of formalist procedures and techniques when it suits them, but not as a matter of solemn and binding oath. For instance, organizational processes akin to serialism are said to play an important part in Oliver Knussen's (b. 1952) music (eg we're told that the dark swelling melody which opens his orchestral piece *Coursing* is "strictly serial") but these have gone relatively unremarked because the ear is irresistably drawn to other things; the music's energetic flow and its sheer sound. Knussen is a masterly deployer of instruments.

Strict and paramount adherence to serial organization often led in the past to harmonic results which could at best be called haphazard. Now there seems a much greater interest in sorting out the harmony first of all; although it should be noted that "harmony" does not necessarily mean C major chords or a sudden "return to tonality" which has been widely forecast, often by critics who have opposed all non-tonal developments and anticipate some spectacular stylistic recantations in the manner of Shostakovitch's *Soviet Artist's Reply to Just Criticism* (alias his fifth symphony).

There *has* been music written recently which is ablaze with consonance. The American minimalist Steve Reich (b. 1936) clothes his subtly changing ostinati in tonal hues, usually in one consonant chord which, together with the simple rhythmic variation and interplay which is the essence of his style may last anything up to an hour. It's a valuable reminder than an hour of unrelieved consonance can be just as wearing as a similar period of unrelieved dissonance. Tonality, in classical usage, is the alternation of dissonance and consonance, with the modulations to new keys providing large scale dissonance with the music's basic key. The restoration of tonality in full working order would *mean forgetting not only the twentieth* century, but most of the nineteenth as well.

What is happening more generally is a gradual enlargement of the harmonic repertoire, encompassing chords and progressions with tonal implications. This affords the composer a very wide choice of possible material. For instance, in the maelstrom of Robin Holloway's (b. 1943) *Second Concerto for Orchestra* you can find not only complex metrical schemes, agile chromatic lines and huge chords containing seemingly every possible note at once, but also quotations from *O Sole Mio* and *Arrividerci Roma*. In the mock-macabre orchestral song-cycle *Frankenstein!! by the Austrian composer* H. K. Gruber (who, I am delighted to report, is said to be a descendent of the composer of *Silent Night*) the soloist declaims whimsical poems about werewolves, vampires and bats against a super-expressionist "school of Hammer-horror" background.

At this point it may seem that the "new expressivity" (another beloved critical term) has led to a complete fragmentation of any previous central current in music; each composer takes refuge in an increasingly eccentric personal stance. Strangely enough, of those composers who have in some way continued in the modernist continental traditions of recent years, two of the foremost are British (less strangely, they have both been received with a great deal more enthusiasm on the continent than in their native land). Brian Ferneyhough (b. 1943) has imbued the idea of integral serialism with a passion and an extra-musical philosophical undercurrent it rarely had before. He has also made it even harder to play, because of the enormously specific way he notates the music, so that the performer will have to deal with several very detailed instructions for dynamics, articulation, vibrato and so on at once. In fact, one tenet of his works for solo performers, characteristically centred on the philosophy behind the act of performing music rather than on the practicalities of actually doing so, is that the music is intentionally *too* difficult to play, so that the audience's attention will focus on the difficulty with which the performer copes with the music, rather than the ease he throws it off with, as is the case with most "virtuoso" (ie performer-centred) music.

A number of expert performers have taken up the challenge of Ferneyhough's puritan view of their art; but the other continentally celebrated Briton, Michael Finnissy (b. 1946) is fortunate in being able to play his own violently rhapsodic and rhythmically complicated piano music with true *bravura*. The interaction of instrumental virtuosity and compositional activity seems again to have been a continental trait (*vide* for instance the oboist, Heinz Holliger and the trombonist, Vinko Globokar, both prominent composers) which our own admittedly excellent British players have generally avoided.

Finnissy's intense music has the distinction of still being able to draw bursts of angry and annoyance from the now largely desensitized critical fraternity. It reminds you of the long-dead days when people spoke of a musical *avant-garde*. There are still composers working in an experimental vein – but the appellation *avant-garde*, hard at work throughout the twentieth century and hyperactive in the postwar years has since been put to bed for a long rest. A quick look at the output of one experimental musician, Trevor Wishart, will in any case show that the term's implications (of a search for untried artistic modes merely in the pursuit of cultural *frisson* for the initiated) are inappropriate, even, some might say, immoral in the economically bleak 1980s. Wishart's work insists that new music can be – indeed, must be – something that everyone who wants to can take a central part in. His books of musical games, by now a trusty standby for school music teachers, are based on the *Californian "new games" (ie non-*competitive) movement. He was recently televised producing a piece out of that most accessible of cultural resources, a car scrapyard; and even his work on "extended" vocal techniques (including myriad ways of grunting sonorously) is essentially democratic, suggesting that successful results will be attained by self-application rather than thanks to the chance possession of a conventionally beautiful voice.

Experimental composers have always put new material into the musical mainstream (not always acknowledged by the composers who inhabit it). Nowadays there is another source, inevitably, technological. For most people, music probably *is* technology – records, cassettes, the fidelity with which recorded sound is reproduced. For the composer, the possible benefits of technology have hitherto reposed in the electronic (analogue) synthesizer, on which musical ideas can be executed, recorded and manipulated without recourse to live performers. More recently the computer has taken on the role of the potentially faultless servant of the composer's intentions, using the process of conversion between digitally stored sound information and electrically produced sound which will be familiar from digital recording. Needless to say, there is also a busy branch of artificial intelligence devoted to teaching the computer to make compositional decisions.

The advantage of computer synthesis is the minute control that the programmer has over every detail of the sound. In comparison, sound from the analogue synthesizer seems distinctly rough hewn. Perhaps, also, the process of programming a computer is more akin to the compositional process than the endless mechanical activities (adjusting dials, soldering leads, cutting tape with razor blades) which are the lot of the analogue synthesizer's operator. But there's the rub – as any computer's intimate knows, programming inevitably becomes an absorbing art form in itself. Or, as Conrad Cummings wrote after a recent conference, "A nineteenth century composer could spend an hour or two sharpening quill pens to avoid that inevitable confrontation with the blank music page. A twentieth century composer can spend a year or two developing a computer composing tool (a program, a collection of equipment, a music language) to avoid the same confrontation. Sharpening pens for longer than two hours begins to seem silly even to the composer who does it. Unfortunately computer tool development can go on forever. It does not look silly and one never runs out of pens."

Nevertheless there are, increasingly, composers who can keep enough of a grip on themselves to produce pieces in which, as in all good music, the techniques (or here, technology) are merely the means to expressive ends. Two recent pieces illustrate a range of techniques which will stand quite a few years' further exploration. In Paul Lansky's *Six Variations on a Poem of Thomas Campion*, the verse is seemingly recited by a robotic compound of the Beverley Sisters; but the entirely convincing speech sound is in fact synthesized from scratch. And in Jonathan Harvey's *Vivos Voco Mortuos Plango*, the recorded sounds of the bell of Winchester Cathedral and a choirboy's voice (a real one this time) are analysed, manipulated and combined without ever losing the sense of their "real" quality.

In this musical area at least, the twentieth century looks as if it will end in the same spirit of inquiry with which it began.

Karlheinz Stockhausen and Pierre Boulez: angry young men?

The author is Cramb Fellow in composition, in the Department of Music, Glasgow University.

BOOKS

Limitations of the intellectual

by John Cruickshank

La Cérémonie des adieux, suivi de Entretiens avec Jean-Paul Sartre, août-septembre 1974
by Simone de Beauvoir
Gallimard, £10.35

Simone de Beauvoir: a life of freedom
by Carol Ascher
Harvester Press, £9.95
ISBN 0 7108 0313 3

Simone de Beauvoir and the Limits of Commitment
by Anne Whitmarsh.
Cambridge University Press, £14.50
ISBN 0 521 23669 X

Jean-Paul Sartre and Simone de Beauvoir

The Anglo-Saxon mind tends, quite rightly, to be amazed by the solemn self-importance of so many French intellectuals. What Stendhal called *la classe pensante* treats the details of its life with the utmost seriousness, and Simone de Beauvoir is no exception. In *La Cérémonie des adieux*, not content with the self-absorption of four earlier volumes of autobiography, she adds a further 150 pages on the closing years with Sartre (who died in 1980), and adds 400 pages of tape-recorded, edited conversation between herself and the master.

The books by Carol Ascher and Anne Whitmarsh, for all their many and different virtues, accept de Beauvoir at her own valuation. The result is a sometimes quite inappropriate gravity. Whitmarsh, for example, lets pass the astonishing complacency of de Beauvoir's claim that she and Sartre did not take part in the Spanish Civil War because "nothing in our previous background inclined us to take such headstrong action." Similarly, de Beauvoir's question-begging self-portraiture – "I am an intellectual. I take words and the truth to be of value" – is itself taken at its face value.

As for the mixture of comedy and pathos in the relationship between de Beauvoir and Sartre, this is something which is never mentioned. The sometimes ridiculous aspects of Sartre's affairs with other women (an integral part of his understanding with de Beauvoir) are regularly missed. Thus Ascher does not bat an eyelid when she quotes de Beauvoir on Sartre's affair with her friend Olga. De Beauvoir describes Sartre as devoting "a sort of fanatical attention to Olga's every twitch or blink, from each of which he inferred whole volumes of meaning." She adds: "Had Olga already granted him that absolute preference which he demanded of her, and if not, would she soon do so? We spent hours thrashing out such problems." Meantime, the world continued on its journey through violence and starvation, and sensible readers claimed to find in the writings of Sartre and de Beauvoir authoritative answers to their moral, philosophical and political problems.

Ascher, more particularly, belongs to this latter category. Her book makes it clear that she is incapable of adopting any critical distance towards de Beauvoir. On the second page she confides that "while attending a demonstration in support of reproductive freedom, I imagined that she would be pleased." On the penultimate page she reveals her debt to her subject: "One of the greatest gifts Simone de Beauvoir has given me, both before and during the writing of this book, is her conviction that it is all right to be an intellectual." There is absolutely no hint of tongue in cheek.

To say that de Beauvoir takes herself rather too seriously is not, of course, to suggest that what she writes has little or no value. Her account of her life with Sartre, for example, is intensely interesting in various ways. It presents the spectacle of two human beings wholly dedicated to truth and rightcousness as they understand these terms. It shows the yawning gap which can sometimes open up between intellectual theory and political practice. It reminds us of the contrast which often occurs between the writer as public voice and as fallible individual. It also has much to say about the efforts made by Sartre to re-think his position as an intellectual after the events of 1968 (for which he appears to have been largely unprepared). One can hardly fail to be impressed by his attempt to "*se fondre dans la masse*" in order to try to overcome the age-old problem of the distance – social, intellectual, political – between bourgeois theorist and manual worker, between ideology and praxis. *La Cérémonie des adieux* is essential reading for those who are puzzled by the Maoist enthusiasms of Sartre's anarchist old age, or by his apparent approval, for example, of Baader-Meinhof violence.

These intellectual developments were accompanied by increasing physical and mental deterioration. De Beauvoir provides considerable insight into the unhappy, private aspects of Sartre's last years: his heavy drinking and use of drugs, his periods of senile dementia, his eventual blindness and various unpleasant physical afflictions. The picture which emerges, told in flat matter-of-fact prose, is at once fascinating and saddening. De Beauvoir's final comment on his eventual death has the bleak dignity which characterizes the whole story: "*Sa mort nous sépare. Ma mort ne nous réunira pas. C'est ainsi; il est déjà beau que nos vies aient pu si longtemps s'accorder.*" "Being-for-death" indeed.

As regards the sustained conversation between de Beauvoir and Sartre in 1974, the latter says in the very first minute: "*Aujourd'hui, rien ne m'intéresse*", and then proceeds to talk about his life and his ideas for 400 pages. In the event, de Beauvoir proves to be a skilled interviewer. She feeds questions to Sartre which elicit often interesting, sometime surprising, replies. We learn, for example, that as a young man Sartre thought little of Gide but enthusiastically admired Giraudoux. Later, he declares that he has not been excited by any writer from the early 1950s onwards. The conversation ranges widely in subject-matter – however, so that apart from his taste in literature we also learn of his taste in food. Similarly, he gives us his view on the nature of freedom, the right attitude to money, relations with the Communist Party, the case for atheism, and so on.

Carol Ascher, in her study of Simone de Beauvoir, is thoroughly engaged with her subject in both emotional and intellectual terms. This explains in part the occasional polemical tone of her approach, but is also gives her book an admirable warmth and enthusiasm, as well as a distinctively personal tone. She has obviously learned a lot about herself in the process of reading and reflecting on de Beauvoir's writings. She says, indeed, that de Beauvoir is particularly worth reading because she is a central figure of her times who has lived and expressed the tension between the personal and the social, the self and others. De Beauvoir's novels and essays have much to say about the paradox in which the individual experiences ultimate solitariness yet can do nothing which is not a social act.

Because of Ascher's enthusiastic response to de Beauvoir's philosophy, she accepts without any serious debate the need to break free from "illusions of an eternal or absolute essence." The enormous implications of such a phrase are not analysed or debated. What we are given is much more an expository than a critical study. As a result, the book is a typical example of that tortured, post-Christian humanism which takes for granted that the individual is solitary, that old age and death properly create horror (de Beauvoir's "terror" before these facts is repeatedly emphasized), and that the evil of the world is to be explained and resisted in strictly socio-political terms. It is true, as Ascher points out, that de Beauvoir shows a greater harmony with herself in the final volume of her memoirs. But the consolations which she finds are distinctly limited, as in the idea that death gradually becomes more acceptable as the deaths of those one loves "steal one's own life." De Beauvoir writes:

> Death is absence from the world, and it was that absence that I could not resign myself to. But by now so many absences have torn their gaps in me! My past is absently absent: are my friends who have died and those I have lost; absent too so many places in the world to which I shall never return again. When total absence has swallowed everything, it will not make so very great a difference.

In comparing de Beauvoir with Sartre, Ascher makes three general distinctions. At a literary level, she finds de Beauvoir's fictional characters more alive than those of Sartre. However, she is content to assert rather than demonstrate. Indeed, most of her comments on de Beauvoir's fiction stick closely to a rehearsal of the plot and a few comments on the themes or ideas which the plot embodies. There is no literary analysis in the strict sense. Ascher does at least admit that de Beauvoir's writing is not "finely chiselled" and that she is not "a lover of form or of the perfectly wrought plot". Despite her life-long devotion to writing and her repeated insistence on the importance of imaginative literature, she is not a great artist. She writes, essentially, at the level of the higher journalism. Brigid Brophy's wicked remark of 1965 is an exaggeration, but one can understand her exasperated assertion that de Beauvoir's writing is "less evocative than one stylish nail-paring from Colette's aged and arthritic hand."

The second distinction between de Beauvoir and Sartre has to do with the question of violence in pursuit of political ends. De Beauvoir does not always deny the possibility or necessity of violence, the more so since she largely shares Sartre's view of the fundamentally conflictual relations between individuals (following Hegel's assertion that "each consciousness desires the annihilation of the other"). And yet she appears to have doubts. In the following remark, for example, Ascher rightly points out the significance of the word "almost": "A freedom which is occupied in denying freedom is itself so outrageous that the outrageousness of the violence which one practises against it is almost cancelled out." This issue is debated at some length in the novel *The Mandarins* in connexion with the violence of Soviet labour camps in which dissidents are ill-treated and often killed. Ascher comments on the novel:

> Here, the immediate issue is whether a small group of French leftish intellectuals ought to expose the violence of the Soviet Union, potentially letting loose a wave of anticommunism in an already polarized era; or whether they should, in effect, protect the hopes and dreams of those (including themselves) who still look to the Soviet Union. To choose the former is to choose truth, and to take a stand against violence; to choose the latter, at least in theory, is to help tend and nourish the possibility of a future equality and liberation. Of course, two levels of violence are perpetuated by the second choice: the continuing physical violence against the inmates in the Russian camps and the mental violence against the French people who are looking for truth.

De Beauvoir seems to have come closest to sharing Sartre's more positive approval of political violence in the latter stages of the Algerian war and especially in connexion with anti-colonialism. She sees violence as being grounded in material scarcity and the resulting struggle for resources. It follows that "it is only in violence that the oppressed can attain their human status." The "institutionalized violence" of colonial domination creates a counter-violence. Even here, however, Ascher argues that de Beauvoir is simply describing the facts as she and Sartre analysed them. She does not express approval or satisfaction, and Ascher claims to know of no work by de Beauvoir in which her acceptance of violence is unequivocal.

The third, most obvious distinction between de Beauvoir and Sartre has to do with the former's study of women in *The Second Sex*. Indeed, her writings on feminism dramatically transformed Sartre's ideas of freedom. Ascher expounds de Beauvoir's feminism at some length, largely accepting her claim that "one is not born, but rather becomes a woman" and her assertion that sex differences have little or no "ontological significance". At the same time, Ascher is not unaware of the criticism made of de Beauvoir since the original publication of *The Second Sex* as long ago as 1949. She notes the fact that de Beauvoir always regarded Sartre as her superior and was willing at various times to accept his economic support. There is also the view that some of de Beauvoir's ideas are incompatible with general feminist ideology and that there is "unconscious sexism in certain arguments and not a few metaphors of de Beauvoir's and Sartre's form of existentialism."

Anne Whitmarsh provides a generally more detached account of de Beauvoir. She describes in a straightforward way the effect of moral, social and political commitment on de Beauvoir's writing and way of life. She takes a balanced, careful approach and is not unwilling to put her readers on their guard. Thus she rightly insists that de Beauvoir's volumes of autobiography should be treated with some scepticism, and reminds us that de Beauvoir has never detached herself from the "closed circle" of Parisian left-bank, left-wing intellectuals led and dominated by Sartre. She reminds us, too, that de Beauvoir has always retained "those elements of bourgeois thinking and life-style that suited her".

Having given a brief account of de Beauvoir's rejection of the outward forms of religion, Whitmarsh goes on to argue that she retained its moral content in terms of austerity, hard work, high principle and conscientiousness. No doubt "a stern ethical system" is not the same thing as a religious faith, but Whitmarsh makes an interesting and suggestive comparison between de Beauvoir's ethics and those of Catholic philosopher Emmanuel Mounier. For both, ethics and politics are closely identified. Indeed, de Beauvoir regards "*idéalisme moral*" and "*réalisme politique*" as one and the same thing. This is the basis of her political commitment. The nature of that commitment is implied by her assertion that "the ballot-box is a most inadequate mechanism of change."

The main thrust of Whitmarsh's book, as the title indicates, is a study of the limitations inherent both in intellectual political commitment at large and in de Beauvoir's version of it in particular. Chapter four contains a very good survey of the theory and history of this kind of commitment among writers in France from the 1930s onwards. The role of the Occupation in politicizing many writers is well described, and some of the problems and limitations which followed are seen in a brief but useful analysis of Camus's attitude to political questions. Whitmarsh emphasizes his greater concern for individuals than for classes, and his increasing preference for private effort rather than for public intervention. Some of de Beauvoir's own attitudes recall those of Camus, and he would no doubt have approved her claim that "the task of literature . . . is to preserve from technocrats and bureaucrats all that is human in man."

Whitmarsh makes it clear that de Beauvoir, like Sartre, saw the intellectual's role as one of criticizing politics rather than indulging in practical political activity. She links this with the striking ineptitude which both writers showed on the few occasions when they entered the field of concrete political action. As the years passed, they became increasingly aware of their failure as committed writers. They failed to find a working-class audience so that their commitment was largely ineffectual in terms of their own good and purposes. In contrast with the confident claims of Sartre's *What is Literature?* of 1947, de Beauvoir admitted in 1972 that she no longer saw writing as "a privileged means of communication". Indeed, both writers had registered the collapse of the commitment dream by 1960. De Beauvoir confessed to Madeleine Chapsal that "a writer never engages in political work as a writer", while Sartre told the same interviewer that he had lost the illusion that literature can bring about political change.

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BOOKS

Worker directors

Under New Management: the story of Britain's largest worker cooperative – its successes and failures
by Tony Eccles
Pan, £2.95
ISBN 0 330 26285 8

What happens to industrial enterprises when they are collectively owned and managed by their workforce? Do they, as some have suggested, thrive because the workforce is, under such an arrangement, highly motivated with the effect of boosting labour productivity to undreamed of levels; or do they flounder, as others would have it, under the yoke of an undisciplined labour force seeking to maintain employment beyond prudent commercial limits, indecisive management, unresolute marketing and poor utilization of capital?

The historical legacy of industrial producer cooperatives (IPCs) is extremely varied. On the one hand witness the Mondragon Cooperatives in Northern Spain – a success story beyond anybody's wildest imaginings – on the other witness the overall statistical records pertaining to IPCs – which may not paint a picture of unremitting failure but which certainly do not point to a green and pleasant land. As more and more of us look to a fundamental restructuring of the relationship between capital and labour in solving the deepset problems of our archaic industrial system, any detached objective study of industrial cooperatives is welcome. Professor Eccles's book, though slanted at the semi-popular market, certainly fits the bill. The author is blessed with a delightfully engaging style and, despite his own role as a consultant to the centre piece of his drama – the Kirby Manufacturing and Engineering Cooperative (KME) – his conclusions and assessment appear fair and objective.

KME, of course, failed despite the high hopes of its founders, government money (but not enough!) and, in its early years, the patronage of the then (1974–76) Secretary of State for Industry, the Right Honourable Tony Benn. Professor Eccles's conclusion is that the cooperative was beset by insurmountable problems from its inception but these were exacerbated by nearly all those involved, the workers, the civil servants, the previous owners, the trades unionists and the ever wavering politicians. Though the story of KME is chastening it should not, in Eccles's view, lead us to reject the idea of industrial cooperation.

An all too easy way of explaining away the failure of KME is to deny it the credentials of being a cooperative in the first place; to search for some detail in which it did not accord with cooperative principle. Indeed in the more fustian quarters of the cooperative movement this has been precisely the stance adopted; but this will not do.

KME was potentially democratically controlled by its workforce, it was owned by its workforce, there was no significant return to capital and membership was open – all basic principles of cooperation. The Kirby cooperative was nevertheless dominated, in most respects by Jack Spriggs, the convenor of shop stewards for the Amalgamated Union of Engineering Workers, and Dick Jenkins, convenor of shop stewards for the Transport and General Workers Union. Both were worker directors. But as Eccles notes "people sometimes voluntarily choose strong leadership and centralized authority" and "democracy is only risked when such leaders manipulate constitutional arrangements making it impracticable for followers to dislodge them".

The brief dramatic history of KME certainly seems to bear out the interpretation that the members were more than willing to leave the running and thus the fate of the cooperative in the hands of Spriggs and Jenkins, and there is some evidence that these two gentlemen limited the other members' access to information. This latter observation certainly gives some support to those who wish to dismiss KME as a fake cooperative, as full access to information is yet another principle of cooperation. Be this as it may it also seems evident from Professor Eccles's detailed case-history that had information been more widely disseminated then the ordinary members would have been neither motivated nor knowledgeable enough to alter the fortunes of the cooperative.

Eccles also dismisses capital starvation and the lack of an effective market for (at least some of) the products of the cooperative as major factors contributing to its failure. KME was undercapitalized, given its attempted level of operations, but had the leadership chosen to slim it down to those activities which were clearly viable then undercapitalization would not have proved a major obstacle.

The members of KME, unlike those of Mondragon, only had nominal capital stakes in their cooperative – the result was, of course, a very high gearing with debt mainly owing to the Government. Many scholars – particularly those impressed by the record of the Mondragon cooperatives – believe that members' capital donations are an essential ingredient of success; if this is correct, but there are alternative interpretations of the success of Mondragon, then KME possessed a fatal flaw. Eccles is, however, inclined to dismiss the view which makes capital donations necessary to success and points out that they were not possible anyway given that the members had little or no capital.

But can workers manage? Producer cooperatives have been all but spurned by the cooperative movement in this country even since the Webbs, in a scathing criticism written at the turn of the century, proposed a negative answer to this question. Eccles's finding here are more equivocal; certainly KME kept itself afloat in most unpromising circumstances for a number of years and in so doing managed to preserve jobs in the short run but not, of course, in the long run. Nevertheless, there was a marked reluctance to recognize that the cooperative could not be sustained at the level of activity which was attempted – in particular the unprofitable product lines were not discontinued and in terms of the normal concerns of good commercial practice this must be counted as a management failure. But such a conclusion raises the vexed question as to whether such canons should be adopted by cooperatives. For many they are alternative forms of employment where mere profitability should be eschewed.

These sorts of sentiments certainly coloured many of the decisions taken by the members of KME which contributed to its downfall. Indeed the members (particularly Spriggs and Jenkins) appeared to have held a fundamentally ambivatent attitude to the total practice of management. As Eccles notes, Messrs Spriggs and Jenkins "simultaneously rejected the managerial role for themselves and refused to give it to other managers". This is an ambivalence rooted deeply in the radical criticism of capitalism; in the extreme management is dismissed as only being necessary because of the exploitative nature of capitalism. I agree with Eccles that such criticism fails to recognize the essentially multivalent nature of management; until a theory and practice of cooperative management and leadership is developed there is perhaps little hope that IPCs will flourish except in exceptional circumstances.

So KME floundered because the wrong decisions were made and management practices were deficient, not because the cooperative form is fundamentally flawed. Anybody wishing to promote the cooperative ideal would do well to read Eccles's informative book.

Peter Abell

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Managing—by degrees

Masters of Business? Business schools and business graduates in Britain and France
by Richard Whitley, Alan Thomas and Jane Marceau
Tavistock, £12.95
ISBN 0 422 76500 7

Of the many developments in higher education during the 1960s in Britain and in France not least important was the expansion of management education, in particular the establishment of a number of prestigious business schools. They reflected the changing nature of industrial and financial organizations, "the growth of multi-divisional, multi-industry, multinational giant firms", the increasing importance of new managerial techniques, especially for corporate planning and control, and the more widespread acceptance that "general management" could and should be taught as it had been for many years in the USA.

Masters of Business? is concerned with the social and educational origins and the careers of graduates from the two leading British business schools (London and Manchester), which were established and financed jointly by industry and the state, and from the rather different, privately funded, international institut Européen d'Administration des Affaires (INSEAD) at Fontainbleau.

After discussing the origins and development of the schools the major part of the book presents the results of surveys of their respective national graduates and of interviews with current students carried out in the mid-1970s. The complex and detailed findings do not make easy reading; in many cases they are based on rather small numbers; the research however is carefully and clearly presented and will be of value not only to those concerned with management education but also to anyone interested in social mobility and the recruitment of elites and in the role of education in such processes.

As the authors clearly indicate, these schools were a particular resolution at the time of debates which are still by no means generally settled. Can the ability to "manage", as distinct from certain technical skills, be taught, or are managers "born not made"? Should management courses be provided in a concentrated short form primarily for existing managers, with lots of experience to draw on, as a means of improving their performance (or even as a perk), or should the schools provide postgraduate courses, over one or two years, for students with little or no business experience and with uncertain managerial abilities? What criteria can be used to assess the value of management education (or indeed to assess the success of any manager)? If firms do not determine the programmes of business schools (as they did not, or not unilaterally), and if any individual firm cannot be certain of benefiting from the results of business school education, can they be expected to support them financially? These and similar questions provide one reason for the question mark in the title of this book.

The authors, however, go a long way towards answering the other sorts of questions suggested by the title. With their Master of Business Administration degrees (MBA – but MSc in London!) the schools provided a new form of "cultural capital" to aid careers in business. Such credentials do not, however, automatically lead to positions of power and privilege in the occupational system because of reluctance by the business world to accept such educational verdicts, and because the holders of such credentials remain in competition in their careers with managers who have used other routes and acquired other qualifications.

MBAs certainly obtained higher salaries than their age peers, and the degrees could help them to switch sector and/or function (especially in Britain) or top up existing qualifications (France).

In both countries, however, social origins and previous education remained of considerable and in many respects predominant importance for future careers; in only a small minority of cases did the school appear to provide a route to the top for those without considerable existing "social and cultural capital". On the other hand only a minority of the graduates surveyed could be described as "high flyers" likely to secure top positions in the largest financial and industrial organizations. This appears to be partly because other characteristics were necessary, such as father's occupation (Britain and France), education (in Britain public school and Oxbridge) and occupational experience; and partly because a considerable proportion of MBAs chose to move into smaller firms or to set up their own businesses rather than compete in the largest firms.

Thus while the business schools for the most part did reproduce existing patterns of advantage, they cannot be seen as providing the sole, or even a major, means of access to elite positions in economic institutions in either society.

Though a comprehensive assessment of the functions of management education in Britain has yet to be written this study, with its valuable comparative emphasis, will be an important contribution to it.

Richard K. Brown

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Fringe benefits

Companies, Incentives and Senior Managers
by G. C. Flegehen, with W. B. Reddaway
Oxford University Press, for the Institute of Fiscal Studies, £12.00
ISBN 0 19 829002 0

It has long been said that senior managers in British industry have suffered unduly from reduced incomes and status, due to heavy taxation, compounded by egalitarian incomes policies. Furthermore, those relative losses are often alleged to have eroded morale, or performance, or led to the emigration of highly skilled people.

The Institute of Fiscal Studies decided to launch an inquiry on the subject, to review the evidence supporting such beliefs. The authors of *Companies, Incentives and Senior Managers* interviewed a sample of relatively large manufacturing companies, gathering their records and conclusions for the 1970s on movements of senior (decision-making) staff, their morale and performance, and any difficulties encountered by their companies in filling senior posts, or getting their responsibilities satisfactorily performed. The outstanding result of the inquiries was to show how few instances of either movement or consequential problems were to be found. In spite of declining real standards of living for the income group in which they fall, senior managers remained with their companies remarkably consistently. Where they did move, there was little evidence of more than normal problems in filling vacancies. Moreover the replacements were mostly thought to be perfectly good substitutes. The only general evidence of malaise was the increasing preoccupation with their personal financial affairs.

In particular, there was little sign of the evidence for senior managers being prone to move abroad on their own initiative; nor for companies to have difficulty in getting the right people to move back to UK. In fact the usual ties which prevent much international mobility of labour seemed to apply as much to these as to any of the rest of us. Spouses may not be happy nor willing to move to so strange an environment; a second family income might not be so available; schooling for children is commonly less satisfactory or more difficult or expensive to provide. Tax burdens, pay controls and salaries notoriously lower than similar salaries overseas may have been depressing, but seem not to have induced anything like the retaliatory action, (not erosion of standards) they have often been assumed to do.

However, companies can reward their senior staff with benefits in kind, which escape the full impact of taxation to some extent, and the rules of pay policy altogether. By 1977 the fringe benefits amounted to something like a third of salaries. This is perhaps not so generous as it seems, since it includes company pension schemes. Company cars, life and private medical insurance are more analogous to substitutes for cash salaries. The IFS researchers recorded the changes in some detail; but as usual, the figures have to be the cost to the company, which probably overstates the value to the recipient of a service whose specification and quality he does not choose. Nevertheless, the increase in benefits recorded during 1973 to 1977 would be a genuine increase in value. This looks surprisingly small on average given the opportunity to avoid fiscal or political constraints by this route. Fringe benefits were only 5 per cent of salary higher in 1977 than 1973.

There is no doubt that fringe benefits are valuable to company managers, or that the improvements in the 1970s would have been valued. For instance, the commonest new schemes included private medical insurance, loan schemes and even pet-rol (by 9 per cent of companies); and the commonest improvement in old schemes was in company cars. However, the fact that increases and improvements have been relatively modest, or slow to spread, perhaps bears out the main conclusion of the study: that in spite of the undoubted erosion of take-home pay at the top levels, incentives to performance do not seem to have been very noticeably weakened. Perhaps we do after all work for rewards other than immediate cash or kind; or perhaps when the expected reward is not forthcoming, we respond with anxiety, rather than indignation or action.

Independent and expert bodies like the IFS do us an enormous service in investigating the facts about widely-received opinion. The policy-makers then have the opportunity to avoid the disappointment that has so often greeted the poor performance of cherished policies. Economists also may benefit from another well-founded glimpse of the real application of their principles.

Joan Mitchell

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BOOKS

The Great Game

Commitment to Empire: prophecies of the Great Game in Asia, 1797–1800
by Edward Ingram
Clarendon Press: Oxford University Press, £22.50
ISBN 0 19 822662 4

The subject of this book is the effect upon British policy in India and the Near East of Bonaparte's invasion of Egypt in 1798. The book can be read both as a detailed description, based on an exhaustive examination of a great number of published and unpublished sources, of the measures which Britain took to deal with the problems raised by the invasion of Egypt, and as an original argument about the nature of the development of British foreign policy.

It is a commonplace among historians that British policy-makers saw the French invasion of Egypt as constituting a threat to the security of British India and reacted accordingly with diplomatic initiatives in the Ottoman Empire, Iran and the Gulf, with naval operations in the Red Sea, with an expedition to Egypt, and, most importantly, by the destruction of Indian states thought to be likely to ally with France against the East India Company. Professor Ingram describes each of these operations and the discussions which surrounded them. *Much of his material* has been presented previously in articles in *Middle East Studies*, and the most original element of the book is the argument which he first advanced many years ago in his doctoral thesis: that the Governor-General of India, Lord Wellesley, did not take the danger of a French invasion seriously but only pretended to do so (as he did likewise with a threat from Afghanistan) in order to gain support from London (which would otherwise have been denied) for his imperial policy in India. France and Afghanistan, Ingram argues, were necessary enemies, *excuses for expansion in India, not its causes*. The theory is controversial but has much merit: where Ingram is not altogether convincing is when he sees Wellesley's imperial impulses are springing from his personal ambition. In fact Wellesley's goals are so similar to those of his predecessors as to lead to the supposition that the Governor General was carrying out what was regarded as a British Indian policy.

Historians of British foreign policy are likely to be principally interested in Ingram's argument that Bonaparte's invasion of Egypt, and the War of the Second Coalition, presented a crucial choice for Britain between a policy based on the maintenance of the European balance of power and one based on the advancement of Britain's imperial interest. This is not the familiar eighteenth-century contrast. The eighteenth-century imperial interest was linked to British naval power: the imperial interest discerned by Ingram is in India and is dependent on land power. Ingram argues that the role of the Royal Navy has been much exaggerated and that the wars of the Second Coalition proved that it could not supply Britain's true imperial needs. Nor could the traditional eighteenth-century strategy of finding a necessary European ally to maintain the European balance of power while British ships chased over the high seas picking up colonies. No European power would fight for British India; for the defence of that dominion Britain would have to find her own army.

Ingram's thesis depends on his contention that the British Cabinet perceived the need for a choice between the policies of the balance of power and imperial interest. His carefully collected evidence does not convince me, however, that at that time anyone of consequence other than the President of the Board of Trade, Henry Dundas, really believed in the French danger to British India (let alone a threat from Russia); or even that India was of any great importance to Britain, as compared to Europe. For most British statesmen there was no need to choose between rival foreign policies for they never doubted that Britain's interest lay in her relations with Europe. The October 1800 decision in favour of the Egyptian expedition, which Ingram claims as one in favour of an imperial policy, seems to have been made largely for reasons of prestige. At that low point in the war Britain needed to beat someone and the French in Egypt were the most obvious target.

Despite this reservation about Ingram's main argument this book can be thoroughly recommended to all concerned with British foreign policy and imperial history. Although, despite his stated intention, the author sometimes sacrifices his story to his argument, his book is cleverly and provocatively written. But readers will wish that at some crucial points in his argument it was easier to distinguish between the author's interpretation and what is actually in the source upon which he is commenting.

M. E. Yapp

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THE RIVAL SCREEVERS.

SIR HOARE. "ULLO, MATE! SO YOU 'AVE DONE A ELEPHANT TOO!"
WINSTON. "AH! BUT MY COMPOSITION'S DIFFERENT—AN' I'VE MADE A LOT MORE O' THE BACKGROUND."

A Punch cartoon from 1933 shows the role of Britain in India, as perceived by Churchill and Sir Samuel Hoare.

Imperial inquest

Britain in the Far East: a survey from 1819 to the present
by Peter Lowe
Longman, £9.95 and £5.75
ISBN 0 582 48730 7 and 48731 5

There are three reasons why this is a good time to survey the rise and fall of British power in what we still quaintly call the Far East.

First, the events to which the British contributed in east and south-east Asia are now manifestly so important for an understanding of international politics in the second half of the twentieth century that they should be made as familiar to an educated person as are parallel events in Europe. Secondly, the British seem to be getting over the post-imperial tendency to be embarrassed by such assertions of power, which, after all, have been and still are normal to most peoples with power to assert, and so they may be ready for a scholarly inquest. Thirdly, there have been numerous specialist works published during the past twenty years which have greatly added to our knowledge and understanding of British policies and their consequences in this region, and it is time for a summing up of the evidence. As one of the principal participants in this research, Dr Lowe is admirably equipped to provide it.

Britain's empire proper in the Far East lay mostly in south-east Asia, but, although Dr Lowe deals with developments in Burma, Malaya and Borneo, his main concern is with what is usually called, for want of a better name, informal empire. The need for a more satisfactory term is underlined by the complex range of relationships with China and Japan here elucidated. The temporary subordination of independent Asian governments to the British and others was formal enough, with treaties limiting their sovereignty in judicial and commercial matters important to foreign merchants, but their independence was no mere technicality since they had become part of a mobile international order within which, as the case of Japan made clear, they could regain full sovereignty and bid for full equality of status.

Dr Lowe's account of the equally rapid growth and decline of both forms of British power is notable for its conciseness and clarity. The amount of detailed information which he manages to fit into 218 pages is quite remarkable; yet he has taken such care to explain all his references that a beginner will have no difficulty in understanding the course of events.

The most controversial period dealt with is that of the interwar years in which British interests in China were threatened simultaneously by Chinese nationalism and Japanese imperialism. With world-wide commitments and quite inadequate power to defend them all, British governments ruled out active resistance to Japan. On the other hand, they had, in Dr Lowe's view, to be seen to be protecting British interests in China with what little power they had since active appeasement would have fatally undermined British authority in India and other Asian possessions. Yet the policy adopted of financial aid to China while trying to avoid a breach with Japan did itself fail, and it is not clear what policy he thinks would have succeeded. Was the position hopeless even before 1940? Or should a distinction have been made between protecting specific interests by local arrangements with the Japanese, which enjoyed some success, and trying to transform the whole situation by helping the Chinese, which was beyond Britain's power? Allowing a general situation one cannot control to mature is sometimes the least unsatisfactory course in international relations.

David Gillard

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Mellowed sources

Churchill's Indian Summer: the Conservative Government of 1951–55
by Anthony Seldon
Hodder & Stoughton, £14.95
ISBN 0 340 25456 4

The early 1950s are in some danger of becoming a quarry for a revisionism seeking to justify dogmas which, in his last term of office, Churchill would surely have disowned. But while the "radical right" now blames present discontents on the Macmillan era, and finds comfort in the handful of neo-Gladstonians like Ralph Assheton (who in 1951–55 argued for strict economy and a pruning of the bureaucracy), they tend to evade other accompaniments of Churchill's last government. Walter Monckton's appeasement of the trades unions, a management almost untouched by technological change, and those flowers of future disaster, over-manning, plant bargaining, and the annual wage round.

Anthony Seldon's achievement is to put this in perspective while dispelling the traditional view that an ailing Churchill presided over an interim administration. Churchill emerges as neither senile nor incompetent; except in his last six months, an indulgent Chairman of a very able Cabinet, using his diminishing energy to ensure political harmony at home while pursuing almost intuitively and against immense opposition, the grail of a negotiated settlement with the Soviet Union. His indecisiveness, illness, and prolonged equivocation about retirement are shown in the context, not just of one stubborn old man denying Eden his inheritance, but of a Conservative party which had to live through, in order to assimilate, the postwar settlement achieved by its predecessors. Above party, almost at times above Cabinet, he let his Ministers rule their departments, so long as the result fostered the party's survival in office, and where necessary (as with Harold Macmillan's housing programme) diverted resources to help. It was, as Seldon points out, the last *administration* before Cabinet, under more professional handling, became the focus of the sort of horse-trading between centre and spending departments depicted only a decade later in Crossman's diaries.

And Churchill's policy? "Houses, red meat and not getting scuppered", he told Sir John Colville. Despite the rhetoric of free enterprise, most of it was congruent with Labour's 1951 legacy: the Industrial Charter led, not to legislation, but Monckton's style of handling industrial disputes. Indeed, apart from denationalization, and the future of commercial TV, it is hard to see what policy there was; Churchill was "too old to understand the complex aspects [of the economy] . . . though his instincts were in the right place". This leaves the enigma of his search for a summit, in response partly to the old loaded question from the 1951 election – "whose finger on the trigger?" – partly to factors at which Seldon only hints. Not above finessing his own Cabinet in the higher cause, Churchill at length went down to an awful combination of Dulles's implacable hostility to any negotiation with communists, and the pervasive mistrust of Eden and the Foreign Office.

This sympathetic portrait has been constructed very largely out of interviews, in order to bypass the thirty-year rule, and Seldon is able to give clear accounts of arcane Treasury quarrels such as Robot (the attempt to dispose of the sterling balance problem) or the follow-up of Padmore committees. He provides the first substantive analysis of top civil servants in the machinery of government, the relations between Edward Bridges, Norman Brook and the last generation of mandarins like Otto Clarke, Frank Lee and Godfrey Ince, who made policy in their own right. We see how business was transacted and by whom; why Churchill's "Overlord" essay in reshaping Cabinet failed, and the proliferation of the Cabinet office consequent on his erratic conduct of business. The result, however, is like a Victorian collation, full of material which will benefit historians for years, but clogged with detail, and constructed around an essentially static view of government. There is too much on the appointments of minor men, and the lack of a sense of process must owe something to the questions put to respondents, as well as their natural tendency to recount personal assessments. It might have been tactless, but an evaluation of sources, like a Michelin star-grading, would have been useful.

Concentration on linkages rather than process means that very long-running arguments inside the bureaucracy, such as that in the Treasury over the relative merits of currency stability and industrial growth, get curtailed. Elsewhere, analysis is confined within the old departmental framework, which works well for defence, colonial policy or agriculture, but not for nationalized industries, trailing as they did across the formal boundaries. Had Churchill no conception that, after the failure of Ted Leathers to be a nationalized industry supremo, this vast area of the economy was slipping away even from Treasury control? Why were chairmen appointed of such staggering incompetence, following in one of Attlee's worst traditions?

Most of the judgments confirm established patterns: about Butler seeking to maintain an even level of employment, or Churchill's instructions to Monckton "to keep on as good terms as possible" with trade unions "in an attempt to mitigate their power in wage bargaining". There are valuable insights into the pressures on the Chancellor, as in Butler's 1955 electioneering budget, and on the external factors facilitating Keynesian demand management. But it is all couched in a roseate glow, as if Seldon's sources had melted: their responses fall with a deadening blandness, like the reports of the committee vetting political honours.

Did that Government foresee nothing? Seldon quotes a typically opaque Butlerism, suggesting *après moi le déluge*. The Treasury clearly did not then worry unduly about the connexion between full employment and inflation; the Ministry of Labour assumed trades unions would behave as "patriotically" as in wartime. Seldon suggests that there were missed chances to evaluate the Health Service in economic not electoral terms: *to face up to* problems like rented housing, pensions or education, rather than looking for votes. But though he tries to conflate them, Churchill's 1950s 'non-partisan' view of harmony in a static society and the statist progressivism of Macmillan's generation differed quite profoundly.

The Indian summer had vanished by 1954 and could not be Eden's consolation in harder times. Churchill may have settled the hash of the old Right, but as Seldon hints in his conclusion, he allowed to develop problems on which the new Right could feed: one nostalgic generation later.

Keith Middlemas

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BOOKS

Missing link

Walter Savage Landor: selected poetry and prose
edited by Keith Hanley
Carcanet Press, £8.95
ISBN 0 85635 272 1

"A set of Landor's collected works will go further towards civilizing a man than any university education now on the market." Ezra Pound's claim is no doubt extravagant, but he stands in a long line of distinguished admirers who have earned Landor a reputation as a poet's poet.

It is inconceivable, indeed, that Landor's bulky collected works should ever secure a place on any undergraduate course, let alone be a substitute for it, but a number of scholars and critics have directed their attention to his work in recent years – among them John Buxton, Malcolm Elwin, Robert Pinsky, R. H. Super, and (in a depreciation almost as helpfully perverse as Pound's encomium) Donald Davie – and partly as a result of this interest a small number of selections from the corpus have appeared. In 1964 Geoffrey Grigson brought out a generous selection from the poems; in 1969 Charles L. Proudfit edited eight of the Imaginary Conversations with great thoroughness, and ten years later he published about half of Landor's critical writing. In the present volume Keith Hanley has provided what is in effect a companion anthology to accompany Proudfit's critical extracts, consisting of thoroughly annotated selections from both the poetry and the non-critical prose.

Hanley's choice of poems is inevitably less comprehensive than Grigson's: he gives 177 poems against nearly 500 (including the whole of *Gebir*). But this first section is by no means merely an abridged Grigson. One third of Hanley's poems do not appear there, notable among them the fiercely pacific "War is it, O grave heads!", the "torturing care of "O thou whose happy pencil strays", and the hauntingly bleak melancholy of "Death of the Day". Unlike Grigson, Hanley offers a logical ordering, extensive and helpful annotation of all the poems which call for it, and in most cases Landor's final preferred text.

The annotation includes important textual variants, and a student might usefully be directed to the note on "Rose Aylmer" to discover how a few minute alterations immeasurably improved an already notable poem and made it indisputably a great one. The importance of using the final text might similarly be illustrated by a comparison of the two editors' versions of "Against the rocking mast I stand". Apart from the restrictions of space, which reduce extracts from most of the longer poems to mere snippets, the only major defect in this first section is an under-representation of Landor's humorous verse; even so, "There may be many reasons why" is a welcome addition to an area where Grigson is particularly strong.

The prose selections occupy a good deal less than half of the volume, the bulk of them inevitably drawn from the Imaginary Conversations. Since there is *room for only* some 3 per cent of the conversations they must be regarded as samples to whet the new reader's appetite, though it has been possible to include two of the shortest conversations in their entirety. Hanley has provided an attractive sampling, and though his sensible decision to leave literary criticism almost entirely to Proudfit's selection means that there is a preponderance of anecdotes here, the extracts presented are not without intellectual weight, and they do not lack variety.

The annotation is again suitably full, and my only complaints are that the student is given no idea of the sometimes immense length of the conversations from which these brief passages are taken, that it is not always clear when an extract forms the beginning or the conclusion of a conversation, and that occasionally an ellipsis in the original may be mistaken for an editorial omission.

Together Proudfit and Hanley have made it practical for the enterprising student to encounter Landor. One could make an extended list of the qualities on offer, all of them evident in this selection. Prominent among them would be: a peculiar form of Romantic classicism issuing in pure and serene poems by a man "deplorably tormented by ungovernable passion" as Wordsworth tendentiously put it; a superb ear; a delicate and unembarrassed eroticism; a missing link in the history of English literature.

J. H. Alexander

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Rites of passage

Coming of Age in Shakespeare
by Marjorie Garber
Methuen, £12.50
ISBN 0 416 30350 1

Marjorie Garber's *Coming of Age in Shakespeare* borrows its title, the author tells us, from Margaret Mead's classic study, *Coming of Age in Samoa*. Like Mead, Garber wants to explore a distant civilization, chronologically if not geographically separated from that of her readers, and she wants, like Mead, to study in particular the process of maturation among its inhabitants.

The civilization in question is, of course, that of Shakespeare's plays, not that of Elizabethan England, and here there are both problems and a disappointment. The people and events of a play parallel those of the society beyond it, otherwise we should not understand them. But the play conveys its meanings in accordance with the conventions of literature and the theatre, not those of social intercourse. The terms of anthropology and psychology must be employed therefore with a prudent awareness that the overriding considerations lie elsewhere.

Professor Garber certainly knows this truism, but she fails to keep it consistently before her. The result is that, mixed in with some genuine insights and correlations, the book offers a good deal that is questionable, beside the mark, or simply odd. It also doesn't entirely shun the commonplace, rather in the way social science discussions sometimes have of relaying the obvious. The disappointment is that Professor Garber doesn't study parallels and contrasts between rites of passage in the plays and those rites in the King and Elizabeth. She does once or twice refer to Lawrence Stone, Peter Laslett or Keith Thomas, but by and large she neglects the accumulating research into Elizabethan social processes.

The anthropological criticism of Northrop Frye, Professor Garber explains at the outset, concerns itself with the seasonal cycle. Her own brand of anthropology, or anthropology-cum-psychology is that which deals with life-crises in the individual. Thus she summons to her aid Van Gennep on rites of passage, Victor Turner on liminality and Erik Erikson and Bruno Bettelheim on the identity crisis and the psychological problems of growing up. Such allies are imposing, but they too often lead her to unsurprising conclusions, and the technically impressive vocabulary often yields rather pedestrian criticism. Thus Othello, we gather, "participates in the external ceremonies that mark rites of passage in marriage and in war, but never effectively crosses the threshold of self-knowledge". Romeo, in doffing his name ("Henceforth I never will be Romeo"), undergoes a rite of passage "which symbolizes his transition from the clan of the Montagues and the bands of joking youths to the role of Juliet's lover, soon to be her husband". When Edgar, *per contra*, lays claim almost at the end of *Lear* to his own name and title, this "marks a crucial development in the tragedy, and constitutes nothing less than a rite of passage". After such revelations, the reader begins to resist a little the claims on his attention of Professor Garber's anthropology.

Attention revives with a short discourse on the magical properties of names among Australian tribes and in ancient Egypt; but this leads only to unexciting discussion of naming in *Richard II, Antony and Cleopatra* and *Coriolanus* (without reference, in the last case, to rather subtler accounts of the same topic in writers aspiring to nothing higher than literary criticism). Again, we are told that "in Shakespeare's plays learning to speak is a sign of responsible adulthood, yet another rite of passage – a coming of age – for the protagonist". But this produces only familiar instances of silence (Cordelia, Coriolanus), speech-breakdown (Lear, Othello, Richard III) and the recovery of speech (Pericles). It is not reassuring to have the dramatic importance of appropriate speech confirmed by allusion to President Kennedy's "political coup in declaring himself a Berliner in Berlin. Four simple German words, in the midst of a speech otherwise entirely delivered in English, captivated a nation and made favourable headlines around the world".

If familiarity sometimes invites inattention, waywardness asks protest. Among the vices of misapplied anthropology, one finds the far-fetched allusion: "Aeneas takes the golden bough into the land of the dead, as a talisman assuring him the right to return to earth; and Hamlet might be said to make a similar use of his father's signet ring, which protects him from the death intended for him in England and allows him to return safely to Denmark". Then there is the forced and distorted reference to modern concepts: in a discussion of cannibalism imagery in *Lear*, Garber tells us that "the parent, who should give life, devours; the womb becomes transformed into a consuming mouth, the *vagina dentata* of psychology and anthropology".

But it would be unfair to represent Professor Garber's book as given over to the familiar or the wayward throughout. On the contrary, much of it draws together mutually-illuminating material from several plays. For instance, out of the jargon which tells us that the twins of *The Comedy of Errors* and *Twelfth Night* repeatedly experience "situations which threaten their societal, and particularly their marital and procreative, roles" comes a discussion that shows convincingly how Shakespeare (a father of twins of course) associates twinning with the nostalgic recollection of childhood and with the undeveloped personality. Thus twinning filters into the conversation of Hermia and Helena in *A Midsummer Night's Dream* and Celia and Rosalind in *As You Like It*. It is part of the language of Leontes, with reference to Polixenes, in *The Winter's Tale*, and is used by Gower in referring to Marina and Philoten in *Pericles*. There are dead or invented "twins" too: Susan, Juliet's short-lived sister in *Romeo and Juliet* and Viola's imagined sister-who-died in *Twelfth Night*. Separation from these alter egos, Professor Garber shows, is a necessary step to maturity. Perhaps this is not especially new, but considering the instances together, as here, does help to establish a pattern of response on Shakespeare's part that can throw light into some darker corners of the plays.

For example, the discussion of maturation does help to provide a focus for that troubling play *All's Well That Ends Well*. Critics have often commented on the play's age-against-inexperience pattern, but it also helps to think of Bertram avoiding the adult responsibility of a full and continuing sexual relationship with Helena through a childish preference for male bonding and flirtation. Or again, Ophelia's flower-giving and Perdita's assume rather richer significance when considered in relation to Shakespeare's wider presentation of the girlish fear of sexuality. Discussions such as these show that Professor Garber's anthropological grid does when properly adjusted fit the plays. It is regrettable that such adjustment was not always made the first priority.

J. R. Mulryne

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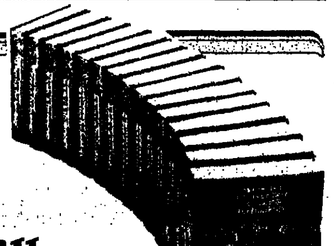

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BOOKS

Mosaic tradition

Economy and Society in Ancient Greece
by M. I. Finley
edited with an introduction by Brent D. Shaw and Richard P. Saller
Chatto & Windus, £15.00
ISBN 0 7011 2549 7

The status of Sir Moses Finley – to use one of his favourite concepts – is now so commanding that most serious students of Greek history will automatically buy a copy of this *volume for themselves and order* another for their college or university library. They will not be disappointed.

They will find 14 articles published during the past thirty years reprinted in it: one each on the *polis*, Sparta, the Athenian empire, land and debt, freedom, and technology; two on slavery; three on types of dependent labour "between slavery and freedom"; and three on Homer and the Mycenaean world. Some indeed (chapters 2, 6 and 13) are reprinted here for the second time. "What I tell you three times is true"? No; it would be churlish to complain when they cohere so well with their neighbours.

The characteristic Finley article is deceptively modest in length, and written in a tough, incisive, no-nonsense style, enlivened by the occasional asperity at the expense of other scholars; it is powerful stuff, both sinewy and meaty. Finley generally goes for the broad sweep rather than the niggling detail. Sometimes he will start by roughing out a working definition (what is a *polis*? an empire? liberty?) or else declare such an enterprise unnecessary, and then march us vigorously around the Greek world in time and space to examine the implications of the concept in question. Sometimes a single striking observation opens out into a wider discussion. Sometimes he develops a typology which may serve as a basis for further research. Where necessary, comparative evidence – from Babylonia, the Himalayas, or the Amerindians – is brought into play.

Unlike most of his colleagues, Finley tends not to proceed by gathering and evaluating large quantities of evidence; rather (except in the Homeric articles of the 1950s) he will select a small handful of statements from our sources on which to base his arguments. How do we know whether such statements are strong enough to support such broad generalizations? How can we tell whether they are characteristic or exceptional? Here we must trust Finley's intuition. It is usually reliable, but there are times when we lesser mortals would be grateful for a few parallel passages. Finley's predecessor in the chair of ancient history at Cambridge, A. H. M. Jones, was frequently criticized for his sparing citation of secondary material, though he provided references to the sources in abundance. Occasionally his successor lays himself open to precisely the reverse charge.

One of the strengths of Finley's work is its insistence on what you might call the ancient world's conventions and institutions (such as mottoes) that we may be inclined to read into the ancient world because we are familiar with them ourselves. With this goes an insistence on the limits of our evidence. Once, indeed, this is taken too far: "we are never told how the tribute was collected within the tributary state". In the Athenian empire, he writes. In fact, we know from Antiphon that at Samothrace it was collected by officials called *ekteges*, who were the richest members of the community, and there is epigraphic evidence that this system was applied throughout the empire from 425BC onwards. What we are never told is whether these gentlemen tried to recoup the money from their fellow-citizens, or whether, as is more probable, the money came out of their own pockets. In either case, this helps to explain the resentment felt by the upper classes in the allied cities against the Athenian empire. But it is characteristic of Finley's sure touch that although he ignores this evidence, he reaches the right conclusion.

The articles have been edited by Brent Shaw and Richard Saller, men well versed in Mosaic lore. Most eminent scholars have to wait until they are dead before they can read an appreciation of their life-work, but in this case the editors have provided an introduction which will enable Finley to do so for the third time. They have also provided admirably helpful bibliographies, surveying recent work on Finley's themes. There are, however, a few things to grumble about. A surprising number of proper names, from Cleomenes to Conor Cruise O'Brien, have been misprinted. On page 74 an erroneous figure remains uncorrected since its first appearance in 1953; fortunately no calculations *depend on it, but it generates* unease, and suggests that other figures should be checked. The original pagination and note-numbering are not indicated, so that anyone who is referred to one of these articles by an earlier publication will still have to consult the original version. Worst of all is the organization of the notes according to a parody of the Harvard system, whereby the reader has to keep his fingers in three places at once. The editors refer to this as an "easy-to-use format". But these matters are of little importance compared with the service that they have done us by gathering these major articles together between two covers, especially as the majority of them have appeared outside the mainstream classical journals.

The editors also hope that the book will make Finley's work more accessible to the general reader. They have, I think, succeeded. In particular, anyone interested in the history of slavery and other forms of dependent labour will find the central core of this book indispensable reading, probing deeper in some areas than Finley's recent *Ancient Slavery and Modern Ideology*. Yet I am still not convinced that we can explain the rise of chattel-slavery in many Greek states from the abolition of debt-bondage within just one state, Attica, especially in view of the diversity of the various *poleis* that Finley himself emphasizes.

Others will dispute other points, for Finley aims to provoke as well as to expound. We are all indebted to his ideas, but we should not, of course, remain in bondage to them.

David Harvey

David Harvey is lecturer in classics at the University of Exeter.

Thomas Hickathrift, one of the humble heroes of the chapbooks, about to make his fortune by killing a giant.

Simple tales

Small Books and Pleasant Histories: popular fiction and its readership in seventeenth-century England
by Margaret Spufford
Methuen, £14.95
ISBN 0 416 74150 9

Margaret Spufford's book grew from two original questions: how widespread was reading ability at the lower levels of society in Stuart England? What has emerged is an excellent brief study of late Stuart chapbooks and a thorough examination of their production, distribution and readership, with a number of important findings which relate to wider questions.

The replacement of ballads by chapbooks (small tracts selling for 6d or less, often for as little as 2d) has usually been dated around 1700. Using the inventory of Charles Tias, a publisher who died in 1664, Dr Spufford is able to push this process back by at least a generation. Tias, by no means the leader in his field, left some 90,000 chapbooks in his stock, roughly one for every fifteen families in the land. It was possible to make a good living in this trade, and the publisher Josiah Blare left a comfortable fortune of over £3,000 at his death in 1706.

Distribution was largely in the hands of petty chapmen, selling their goods at markets and country fairs, and travelling on foot through the surrounding countryside. At least 2,500 petty chapmen (not all dealing in books, of course) were operating at the close of the century, mostly young, pack-carrying itinerants working towards the modest goal of their own shop in a country town. But were the poor able to read their wares? David Cressy and others have shown that even among husbandmen and labourers a significant minority were able to write, or at least to sign their names.

Margaret Spufford here studies the pattern of elementary schooling to argue that the ability to read was probably much more common. Reading was learnt, if at all, by the age of seven, and it was only at that age that a child was thought able to make an economic contribution and was likely to be put to work. Many poor children may have been schooled to the age when reading had been mastered, but taken away before they were old enough to learn to write. This practice cannot be quantified but it is clear that even rural labourers did not belong to a world totally cut off from literacy, and Dr Spufford shows at several points how print could and did "feed into the oral tradition".

Direct proof of humble people reading the chapbooks is even more scarce, though they were certainly popular among middle and upper-class schoolboys who thus mediated, she suggests, between educated and popular culture. Evidence for readership is mostly indirect, drawn from the chapbooks themselves which often were clearly aimed at apprentices, servants, husbandmen and their wives.

The later chapters deal more directly with the *Penny Merriments* and *Penny Godlinesses* in the best surviving collection, made by Samuel Pepys. The *Merriments* include jestbooks, songbooks, bawdy stories and burlesque courtship tales; the latter, for all their simplicity, give a realistic account of the nature and problems of courtship among the poor, and provide further proof that *pace* Lawrence Stone, personal affection and romantic love had a prominent role.

The religious tracts, which made up a third of the total, placed heavy emphasis on death and judgment, using terror to urge repentance. Death as a skeleton appears in many of the woodcut illustrations. The popularity of these little works is important evidence for the strength of religious interest among the non-conforming masses at a time when the Established Church was losing its hold.

The third major category deals with the adventures of chivalric heroes such as Guy of Warwick, Arthur and St George, and stories of more humble heroes who achieved fame and fortune, often by some miraculous twist of fate. The credulity of these escapist fantasies seems finally to have tried Dr Spufford's patience: "The whole point of this literature is that it is useless. It is truly a pass-time." The chapbooks (religious tracts apart) were "crude, unsubtle, earthy, uncompassionate", thought this seems a harsh judgment on some of the courtship tales.

There is still room, as Margaret Spufford notes, for a full study of the chapbook literature by some latter Blagden. Her own book has one notable omission: while we have the story of the chapbook from the publisher's warehouse to its eventual tragic fate as the readers' lavatory-paper, we are given nothing on the genesis of the tracts. Who wrote or (more often) adapted them? Were the religious works written by different compilers, ministers rather than hacks? This seems likely, and some pieces appeared under the names of identifiable clergymen. But the Jacobean popular writer, Samuel Rowlands, produced both godly and merry works (and found a place in Pepys's collection). Some of the merry works can be traced back to earlier balladeers such as Lawrence Price, but did Rowlands have successors who worked in both fields?

There are also a few minor quibbles: the index is very selective, and there is no checklist of the Pepysian titles to help readers without ready access to Magdalene College Library. But this is without doubt a major contribution to the study of popular culture, full of insights, and combining a high level of scholarship with a sympathetic lightness of touch.

Bernard Capp

Bernard Capp is senior lecturer in the department of history at the University of Warwick.

visual, noting on numerous occasions that men and women rarely grasped anything in depth unless able to draw on mental imagery.

Perhaps because of differences in the English polemical tradition, and arguably for the reason that Reformation scholarship in the UK has always been far behind that of Germany and the USA, no work of such has hitherto appeared on this fascinating subject. Mr Scribner will thus place many in his debt for his painstaking attempt to interpret a long and complex tradition of continental learning.

As well as his concentrated scrutiny and analysis of almost two hundred woodcuts (mainly from collections in the British Library, the Warburg Institute, Berlin, Nuremberg, Göttingen and Zürich), Mr Scribner has been obliged to interpret a mass of German primary-printed and secondary-source material. His introduction deals generally with the visual in printing and propaganda, likening woodcuts to homemade gin as "cheap, crude and effective". There is then a chapter on the iconography of early Luther, followed by the standard assessment of religious orders as enemies of the Gospel.

The author's attempt to draw a distinction between the visual imagery of popular culture and popular belief constitutes the main body of his work. With the former, he scores well, his apparent sociological concern finding much scope in secular and temporal activities like jousting, the tournament and carnivals. The chapter on popular belief is also competent in its treatment of the religious procession (a counterpart to the more secular carnival), and apocalyptic manifestations of fatalism, astrology, and mystical Joachite prophecy. But the division between culture and religion is altogether arbitrary, and only valid nowadays as a kind of textbook aid. In the sixteenth century, the sacred and secular were inextricably intertwined, and the work of propagandists making anti-clerical (particularly anti-papal) points is relevant to both areas.

With a chapter on the Antichrist almost certainly the best in the book, Mr Scribner not only affords the reader a running commentary on Lucas Cranach's *Passional* (1521), but provides sharp focus on a tradition perfected in Luther's Wittenberg that, by drawing on a visual code of crowned beasts and whores, successfully denounced spiritual wickedness in high places. When dealing with Reformation teaching and practice, the author seems less able to grasp the Gospel message motivating men like Luther. He also expresses surprise that Catholic counter-arguments failed to command much attention, when papal propaganda surely missed out by being too little and too late.

A book of this kind inevitably contains numerous minor errors of detail and interpretation. Yet such should not detract from the author's overall achievement in the essentially descriptive study presented. Nevertheless, in terms of both language and illustration, Mr Scribner and his publishers have not given of the best. However detailed the author's commentary, the Cambridge University Press, despite all the expertise of modern technology at its disposal, has signally failed to reproduce illustrations in a way the reader can comprehend. Not only are some plates untidy in page presentation, but many so indistinct in reproduction as to defeat the object the original draughtsman had in mind when labouring "for the sake of simple folk" to set forth a message that could be taken at a glance!

How agreeable it would be to end a history don could achieve the basic distinction between monks and friars, and perhaps show more help ing for the English language (not to mention the skills of basic communication that are, after all, the subject of his book!) than his use of jargon indicates. For words and phrases like "to desacralise the numinous"; "a liminal area"; "images as syntagma"; and "the routinisation of charisma" hardly promote argument, much less "the binary structure of Mr Scribner's "socio-cultural code".

Peter Newman Brooks

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Popular belief

For the Sake of Simple Folk: popular propaganda for the German Reformation
by R. W. Scribner
Cambridge University Press, £25.00
ISBN 0 521 24192 8

If Christ preached to the multitudes in parables, the great revolution in paper-making and printing brought the Gospel to the semi-literate of Early Modern Europe in a language of image and sign. Initially so primitive as barely to rank above graffiti daubed on period walls, once it had been perfected this visual propaganda proved a powerful means of communication for both supporters and detractors of the sixteenth-century Reformation. Martin Luther himself certainly relied on the impact of the

BOOKS

BIOLOGICAL SCIENCES

Adaptive patterns

The Mammalian Radiations: an analysis of trends in evolution, adaptation and behaviour
by John F. Eisenberg
Athlone Press, £32.00
ISBN 0 485 30008 7

The proto-mammals first appeared some 200 million years ago. These hairy, nocturnal creatures were characterized by serially differentiated teeth, rudimentary body temperature control and suckling of offspring with milk from modified skin-glands. For more than 100 million years, they remained relatively rare; indeed, they might easily have become extinct. During the Cretaceous period (135 to 65 million years ago), however, the mammals began a spectacular adaptive radiation. Thanks to comparative morphologists and palaeontologists such as Gregory, Romer and Simpson, the main outlines of this evolutionary radiation have been known for some time. But full appreciation of mammalian adaptive radiation also requires an understanding of the ecology and behaviour of modern mammals.

Major advances have now been made in the recognition of general ecological and behavioural principles and a synthesis was sorely needed to place the evolution of the mammals in its natural environmental context. In *The Mammalian Radiations* John Eisenberg takes on the ambitious task of producing just such a synthesis and succeeds in raising our understanding of the diversity of mammalian adaptation to a completely new level. As the first synthesis of this kind, it brings together a truly remarkable range of material and identifies broad generalizations which will surely stimulate new research.

Eisenberg begins his synthesis with a review of the various mammalian groups, dealing first with a survey of relatively primitive mammals (monotremes, marsupials, edentates and pangolins) and then concentrating on the main pincental groups which evolved on contiguous continental land masses. In this review, behavioural and ecological aspects are emphasized, drawing on the results of a host of modern studies. Following this survey, there is systematic treatment of specific themes, such as the relationship between body size and metabolic turnover, definition of feeding and foraging categories, zoogeographical patterns, relative brain size, comparative reproduction and development, and life-history strategies. In the final section, Eisenberg provides a basic overview of mammalian behaviour patterns, emphasizing mating systems and patterns of social organization. This comprehensive coverage guarantees a lasting place for *The Mammalian Radiations* as a key reference work on mammals.

A particular strength of Eisenberg's approach stems from his close personal experience with a wide variety of mammal species, both in captivity and in the field. Through his long-standing attachment to the Washington National Zoo, he has worked at close quarters with one of the world's outstanding collections of mammal species, actively demonstrating the increasingly important part that zoos have to play in broad comparative investigations. In addition, by directly engaging in mammalian field studies in several continents, he has witnessed at first-hand the complex interplay between mammalian species and their habitats. The special combination of these two research areas has enabled him to integrate field data with precise measurements only obtainable under captive conditions (for example, metabolic turnover, brain size and life-history parameters).

The scope of Eisenberg's knowledge is reflected not just in the comprehensive bibliography (almost 2,000 references) and six appendices containing a superb compilation of mammalian vital statistics, but above all in connexions he draws between mammal species across the entire range of geographical distribution and adaptive diversity. The appendices by themselves are an invaluable reference source, including information on body weights, head-and-body lengths, longevity records, parameters of reproduction and development, metabolic rates, and indices of relative brain size. These tables alone represent a massive distillation, making Eisenberg's book destined to become a standard point of departure for anyone seeking quantitative data on mammals.

Eisenberg starts by considering the present array of mammal species from a zoogeographical standpoint. It is good to see the relevance of continental drift as a historical factor of mammalian distribution patterns correctly acknowledged (though not pursued in detail, since the fossil record is generally excluded from Eisenberg's comparative approach). Using data on species numbers for extant mammals on the major landmasses, Eisenberg shows that species diversity is generally greater in the tropics/subtropics than in temperate zones and provides good quantitative evidence of the depauperate nature of mammalian faunas on major islands (the degree of impoverishment depending primarily on proximity to continents). Comparison of entire mammalian faunas demonstrates general comparability in niche occupancy between different land-masses at similar latitudes, but also permits recognition of "empty niches" in certain areas, Madagascar, for instance, lacks any endemic mammals exhibiting genuinely aquatic or ant/termite-eating (myrmecophagous) adaptations.

The existence of comparable ecological "opportunities" in separate land-masses has favoured abundant convergent evolution among mammals, setting the stage for what Eisenberg terms "natural experiments". Analysis of the outcome of these "experiments" provides a prime source of insights into processes and constraints, for example, in the numerous convergent developments between marsupials and placentals. Eisenberg highlights many more subtle examples, such as the repeated independent evolution of adaptations for myrmecophagy, burrowing, gliding, and bipedal richochetal locomotion. Clearly, there are regular patterns in the adaptations of mammals to the three-quarters power of body size (Kleiber's rule), the practical implication of this being that energy requirements per unit of body weight decrease with increasing total body weight. Under special circumstances individual mammal species may deviate to some extent from the norm predicted by Kleiber's rule: fossorial mammals, for instance, tend to have lower metabolic rates than expected, perhaps because of potential problems of overheating in confined burrows.

Brain size also scales allometrically with body size. Until now, it has been widely accepted that brain size scales to the two-thirds power of body size (that is, in proportion to surface area). In another major treatise, *Evolution of the Brain and Intelligence*, Jerison discusses in detail the evolution of brain size in mammals and other vertebrates. Using a surface scaling model, he defines an "encephalization quotient" (EQ) as the ratio between the actual brain size of any individual mammal species and the brain size predicted for that species' body weight from a formula that can be applied to all mammals. Eisenberg, taking a much larger sample of mammal species (547) has shown that mammalian brain size (like basal metabolic rate) scales to the three-quarters power of body size, providing a rather different basis for calculating mammalian EQ values. (Revised EQ values for a wide selection of mammal species are provided in an appendix.) The new EQ values can then serve as a straightforward guide to the brain size of any individual mammal species, based on a comparison with the overall norm for mammals. As with metabolic rates, differential "strategies" can be recognized in mammalian brain size, and numerous correlations can be demonstrated with (for example) level of locomotor activity, nocturnal compared with diurnal habits, dietary categories, feeding strategies, and the overall coordination of reproductive characteristics ("life-history strategies").

Metabolic rates and EQ values have been found to show correlations with the same spectrum of behavioural and ecological variables, notably with feeding/ranging behaviour and with life-history "strategies". It follows from Kleiber's metabolic rule that, as body size increases, mammals can tolerate foodstuffs of decreasing directly available energy content, which typically require increasing digestion time. At any given body size, however, a range of possibilities is open and mammals adapted for eating foods providing little energy tend to have low EQ values in comparison with mammals of similar size living on diets providing more energy. In addition, the former characteristically utilize symbiotic bacteria in digestion, housing them either in a special stomach chamber or in the caecum. Feeding strategies also have repercussions on ranging behaviour, in that (for any given body size) herbivores tend to have smaller home ranges and day ranges than frugivores or carnivores. Ranging, in turn, directly influences patterns of social organization.

Mammals owe their name to their universal peculiarity of suckling the young with milk secreted from mammary glands. The integration of reproductive variables into "life-history strategies" is accordingly central to mammalian adaptive radiation. Eisenberg surveys information on gestation periods, litter-sizes, suckling periods, reproductive lifespan, maximum longevity, and rates of physical development (prenatal and postnatal). A typical female mammal usually gives birth to about a dozen young in her lifetime, regardless of her body size, but these offspring may be produced in rapid succession or strung out over a fairly long period. It is well known that female mammals may produce fairy large litters after relatively short gestation periods or small litters (typically singletons) following long gestation periods. Infants of the first type of mother are poorly developed (altricial) at birth, whereas infants of the second type are typically quite well developed (precocial).

Eisenberg takes the established distinction between altricial and precocial mammals and caters for various intermediate stages with a five-point scale. It emerges that there is no straightforward relationship between degree of precociality and EQ values, although it remains true that highly altricial mammals uniformly have very low degrees of encephalization. As with metabolic rate and brain size, it has been demonstrated that all reproductive parameters of mammals are heavily dependent on body size differences and body size effects must be separated out before any meaningful patterns can be identified. Eisenberg examines each reproductive variable in turn and gradually builds up a picture of their integration into overall life-history patterns.

Dust-jacket illustration taken from The Mammalian Radiations, by John F. Eisenberg.

Features such as metabolic turnover, brain size, feeding/ranging behaviour, and life-history patterns all impinge upon systems of social organization. Hence, patterns of social interaction and mating present the most complex picture of all, as is reflected by Eisenberg's extensive classifications and cross-correlations. Generalization is correspondingly difficult, but it is possible to recognize some consistent principles, as with the emergence of monogamous habits in diverse mammal groups. As Eisenberg demonstrates, mammals have a basic polygynous tendency related to the far greater investment of the female in the offspring, but this may be modified to yield monogamy in certain conditions in which greater paternal investment is favoured. Convergent development of similar patterns again provides valuable support for various hypotheses regarding social developments. Among the terrestrial carnivores, for example, *markedly gregarious habits* seem to have emerged at least four times independently in different families (Canidae, Felidae, Herpestidae and Hyaenidae).

In dealing with certain topical issues, Eisenberg takes an eminently reasonable line. On sociobiology, he recognizes the value of the kin selection concept without subscribing to the grandiose subjection of all social behaviour to this paradigm. He also introduces a welcome note of caution into the discussion of "infanticide". Elaborate sociobiological hypotheses have been built around isolated field observations of the killing of infants by males during "group takeovers", notably in the hanuman langur (*Presbytis entellus*). Cases predominant in the literature concern large-bodied, usually highly precocial, mammal species (especially primates) in which the females must suffer particularly heavily from the loss of breeding potential supposedly required to promote the breeding success of takeover males. Eisenberg aptly suggests that we should, instead, look for more likely explanations rooted in social pathology.

A few minor criticisms can be made of this otherwise excellent book. In departing significantly from Simpson's 1945 mammalian classification, Eisenberg follows the trend of much recent tampering with perfectly serviceable taxonomic schemes. Stability of nomenclature is essential for clarity of communication among biologists, and it is simply unnecessary in most cases to modify existing classifications to fit novel hypotheses about evolutionary relationships (however well-founded). Eisenberg's handling of allometric analysis is also questionable in places. He often uses "convex polygons", rather than best-fit lines, to illustrate the relationship between a given variable and body size. Further, his graphs sometimes have logarithmic transformation of only one variable, thus completely modifying the mathematical basis without explanation. In cases where best-fit lines are fitted, he uses regressions, which are suitable only where one variable is clearly independent and measured without error (a rare situation in biology). Certain basic concepts could also have been better defined. For instance, there is some confusion over *r* and *K* selection, with *r* selection linked in differing ways to resource stability in different parts of the text.

Minor criticisms apart, Eisenberg's synthesis represents a first-class source of inspiration and reference for future research into mammalian evolution. Among all of its other merits, the book also serves a purpose dear to the author's heart: it sets out some of the general principles which will be required for intelligent management of what is left of the world's mammalian fauna. It is appropriate to end this review with a quotation from *The Mammalian Radiations* which defines one of the major areas in which this valuable text will be useful: "Conservation biology as a modern, scientific area of enquiry may emerge at the close of this century as a major applied discipline".

R. D. Martin

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BOOKS
BIOLOGICAL SCIENCES

Against entropy

The Liberation of Life: from the cell to the community
by Charles Birch and John B. Cobb, Jr
Cambridge University Press, £17.50
ISBN 0 521 23787 4

One might expect nowadays that a book about biological issues written from a religious perspective would be a fundamentalist attack on Darwinism or at least a dualistic defence of the uniqueness of man. However, Professors Birch and Cobb, a biologist and a theologian, far from wanting to repudiate current biological thinking, intend to use that thinking to support both "the liberation of the concept of life" and thence "the liberation of the life of humans and non-humans alike". Indeed, they are as orthodox in matters of biological theory as they are liberal on questions of theological doctrine; they believe in evolution by mutation and natural selection as well as "values and insights which we interpret to be Christian".

Birch and Cobb begin with a general survey of the state of the biological art, outlining such concepts as evolution, entropy and adaptation, and arguing that such concepts undermine the orthodox metaphysics of mechanistic atomism. In its place we are recommended an "ecological" metaphysics which, in the style of Whitehead, takes the world to consist of essentially interrelated events.

Then comes a change of argumentative gear (probably the theological side of the partnership taking over). Our "experience of aliveness" shows us that we, too are subject to the ecological model, and that there is no sharp line between humanity and the rest of nature. Correlatively, animals are also subjects of experience, and so should not be treated just as means to the satisfaction of human wants. (Some animals, however, are less equal than others, because of their lesser potential for "richness of experience".) We are introduced to Life, a cosmic power whose capital L distinguishes it from the mere defining characteristic of living things. In its constant struggle against entropy Life has transformed and integrated the universe, and those who recognize this will choose to trust Life. In the end, and not terribly surprisingly, Life turns out to be God – indeed a personal God of love and redemption.

The final sections of the book form something of a coda. After the liberation of the concept of life comes the liberation of life itself: the authors give their views on such topics as euthanasia, genetic engineering, the limits to growth, nuclear power, the position of women, and the possibility of agriculture-based economies. While much of what they say here is eminently sensible, there is a strong glow of Pollyannaism about most of the positive solutions they propose.

Indeed, a refusal to face up to hard questions is characteristic of the book as a whole. The authors are on the side of current philosophical fashion in rejecting mechanism. But rather than themselves entering the philosophical fray, they simply pronounce their ecological alternative. Similarly, on the social issues. Although their conclusions all have good green left credentials, they avoid the more difficult aspects of the arguments. Steady-state economies are recommended, but we are not told anything about the political structures that would bring them about. Euthanasia and abortion are all right, but nothing is said about suicide or killing severely handicapped infants. Animals have the right not to suffer, but it is less than clear why they do not then have the right not to be killed.

The converted will no doubt enjoy this book, and it will do no harm to the unconverted. It is well-meaning and well-written, apart from a certain apologetic tendency in the more theological sections to argue by quotation from (preferably secular) authority. But the authors would have served their cause far better if they had been able to back up their undoubted good intentions with some good arguments.

David Papineau

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Young's classic

The Life of Vertebrates, third edition
by J. Z. Young
Clarendon Press: Oxford University Press, £25.00 and £14.00
ISBN 0 19 857172 0 and 857173 9

Just over 20 years have elapsed since the publication of the second edition of Young's famous monograph. Originally intended to draw together what had become, in the late 1940s, rather disparate threads of study in vertebrate physiology, palaeontology and ethology, Young's book offered a single readily digestible account of the vertebrates and their biology, underpinned throughout by the evolutionary story of their rise and diversification, and physiology associated with each distinct group.

This new edition conforms closely with the previous one, except that the majority of chapters have been considerably updated, with many new figures and the liberal addition of photographs and electron micrographs, which add considerably to the text. The opening chapter, for example, on the "Evolution of life in relation to climatic and geological change", has been revised to include, albeit briefly, discussion of the modern concepts of evolutionary change, including macroevolution versus microevolution, and "gradual" versus "punctuated equilibria" models.

Young also devotes a little time to explaining the differences between the "flexible" approach to classification adopted notably by Mayr and Simpson, with the more rigidly formalized approach advocated by Hennig (Hennigian systematics, or Cladistics). Both these approaches are essentially different ways of expressing views about relationships between organisms based on an evolutionary heirarchy. However, the real challenge to systematics, which Young does not explain, does not lie in this debate, but rather between these two forms of evolutionary systematics and the "new", so-called non-evolutionary systematics or "transformed cladistics" advocated by Nelson and Patterson. However, plate tectonics and palaeobiogeography, topics barely touched in the previous edition are competently explained.

Despite the fact that the core of knowledge of basic vertebrate anatomy remains virtually unchanging save for relatively small changes in detail, all chapters have been substantially updated with regard to anatomy (neural in particular), physiology, behaviour and life histories. Unfortunately, though perhaps understandably, the revision has not extended nearly so thoroughly in all cases to the fossil representatives of the various groups.

In many respects this is an excellent new edition of a classic undergraduate text that should serve well for the next few years. Together with *Vertebrate Life* by MacFarland, Pough, Cade and Heisser (Collier Macmillan, student paperback edition, 1980), it would make an excellent foundation for any up-and-coming vertebrate zoologist.

D. B. Norman

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Tubes and vessels

Transport Systems in Plants
by Jeffrey Moorby
Longman, £6.95
ISBN 0 582 44379 2

Jeffrey Moorby has provided us with a concise and factual account of transport systems in plants, in which he avoids becoming embroiled in fussy detail, especially with respect to practical techniques.

His book is divided into four main chapters plus a short conclusion. The first presents a comparative report on xylem and phloem cells in the plant kingdom, illustrated with various micrographs including some very attractive stereoscan pictures of xylem elements. Dr Moorby explains the difficulties involved in obtaining electron micrographs of sieve tubes, concluding that "few things can be stated with any degree of certainty".

The second chapter is concerned with the translocation of carbohydrates, beginning with photosynthesis and an account of sieve tube loading. Here again examples and comparisons are drawn from studies on many varied species, woody and non-woody, Graminae and broad leaved, C_3 and C_4. Dr Moorby's extensive experience in the use of carbon-11 for translocation studies, is evident in his good, clear account of the problems involved in interpreting the kinetics of tracer movement. Of the thorny topic of translocation mechanisms, however, I do not agree with the slant of some of Dr Moorby's comments. For instance, the balance of the literature seems to indicate that P-protein is not actin-like, that membrane-bound transcellular strands do not exist, and that two directional translocation has not been convincingly demonstrated in a single sieve tube.

The section on ion and water movement, and xylem transport makes the valuable point that many solutes move in both xylem and phloem and exchange between the two. This latter aspect is enlarged on in the fourth (and longest) chapter, particularly with regard to the detailed studies on the circulation of nitrogen compounds from xylem to phloem through various parts. Although the length of this final chapter befits the importance of the topic of transport systems in growth, the treatment here is rather "episodic", as the author admits in his preface. However, careful and detailed, many of the examples concentrate being plants of agricultural importance.

Overall, the book is very attractively produced with about 70 large, clear diagrams, and some photographs. Together with the well paced text, these should make the book particularly useful for undergraduates studying plant sciences.

Barrie Watson

Barrie Watson is research officer in botany at the University of Aberdeen.

BOOKS
BIOLOGICAL SCIENCES

Remote recreation

National Parks: conservation or cosmetics?
by Ann MacEwen and Malcolm MacEwen
Allen & Unwin, £15.00 and £8.50
ISBN 0 04 719003 5 and 719004 3

What are we to make of our national parks? All ten of them were set up over a quarter of a century ago and they reflect the attitudes of the leading conservationists of the late 1940s and early 1950s – a very different breed from their counterparts today. In the austerity years, national parks were seen as a means of safeguarding one particular form of recreation – solitary walking in rough, open, wild countryside. For a generation imbued with Wordsworthian romanticism, hill-walking was what the countryside was for. The 1949 National Parks and Access to the Countryside Act's main criterion for designation was "natural beauty", a term which might have embraced many different kinds of countryside. Its reference to "proximity to centres of population" might have been expected to give areas like the South Downs or the Chilterns an edge. But in the event, all the parks materialized in wild, upland areas in the north and west: the nearest park to London is the Brecon Beacons, 130 miles away.

Today, the national parks are not only remote from the countryside most people visit, they are also relatively unaffected by the major forces threatening the landscape. Agricultural change, the most serious of these threats, has touched the national parks very much less than the countryside of lowland Britain. Yet the parks have enjoyed not only their special safeguards but also the lion's share of the money available for conservation. Meanwhile, the countryside most people visit most often, which also happens to be the countryside most characteristic of England, has been neglected as the pressure on it has increased.

For some time, however, the future of the national parks has been under review. Various reforms have been suggested. The simplest would be the creation of new parks in the kind of countryside which had hitherto been excluded. Alternatively, the parks system could be replaced by some new form of landscape designation better equipped to meet the real needs of the countryside today. In their new book, Ann and Malcolm MacEwen choose not to thrash out the choices that face us, a decision some readers may regret. Instead they content themselves in the main with describing the workings of the existing system, cataloguing failings and achievements, but forging them into no particular overall view.

The MacEwens do suggest a new system of designation, though they do not make much of a case for it. They propose that a new designation called "Countryside Conservation Area" should replace seven of the existing forms of designation other than National Park – such as area of outstanding natural beauty, area of great landscape value, site of special scientific interest (in some cases), and heritage coast. In a "CCA", conservation powers would be similar to those operating in national parks. Such a system would clearly go some way towards rectifying the bias against the lowlands which is built into the present national parks system. The obvious problems of this proposal – such as the devaluation of the currency of designation it would imply – are not addressed.

When considering the conflict between agriculture and conservation, the MacEwens opt for a remedy that also has real weaknesses which they do not address. They argue that the financial support agriculture enjoys should be re-routed in ways which would ensure that it benefitted rather than damaged the environment. "The Common Agricultural Policy should be reformed for environmental reasons", they cheerfully recommend; would that environmental considerations were taken into account in EEC decision-making on agriculture, but they are not likely to be, at least in the foreseeable future.

National parks might be used as a testbed for more direct forms of action – like the extension of planning control from the built environment to the landscape. The MacEwens decline to rely on planning control as a tool. But they call for new powers for park authorities to conserve landscape features, such as conservation orders, which would involve the same basic principle. Once again, the authors' choice goes unexplained. On forestry, the greatest threat to the existing parks, the MacEwens merely conclude that the present approach of the Forestry Commission and the Government is questionable, without putting forward an alternative.

None the less, this book contains much useful reference material, particularly its descriptions of recent cases like the controversy over the ploughing of moorland on Exmoor and the fierce debate about plans to cover the Brecon Beacons with conifers. There is a useful examination of the impact on depopulation in the uplands of the Ministry of Agriculture's policies to encourage farm amalgamations. And there is a valuable look at the use of Dartmoor by the Army. But the real task of assessing the role national parks should play remains to be tackled.

Marion Shoard

Marion Shoard is author of The Theft of The Countryside

Secret life of plants

History of Botanical Science: an account of the development of botany from ancient times to the present-day
by A. G. Morton
Academic Press, £18.80 and £8.80
ISBN 0 12 508 380 7 and 382 3

The study of plants has a history going back far beyond the earliest written records, with a wealth of transmuted cereals, vegetables and fruits to show that neolithic botanists must have had an astonishing knowledge of plants and plant breeding long before Theophrastus (370–285 B.C.), generally reckoned to be the father of botany, first enunciated the basic theoretical concepts of the modern science.

Thereafter, botanical science follows, at least in Europe, the general course of civilization and learning, declining from Greek precocity to laborious compilation in Rome and Byzantium, before sinking into the morass of half-truth and fable that was to pass for science from the fall of Rome almost to the end of the fifteenth century. Nowhere is the renascence of learning better illustrated, both literally and figuratively, than in the comparison of late editions of the charming, but absurd, and essentially medieval *Hortus Sanitatis* with such early masterpieces of accurate observation and precise draughtsmanship as Brunfels's *Vivae Icones* (1530). So complete is the change of outlook that one can scarcely believe it could have occurred within the lifespan of a single individual.

Plants did not, however, reveal *their secrets* at once to the new school of inquirers: some investigators viewed plants as objects rather than living beings, while others, carrying the analogy with animals too far, looked in vain for like organs in the vegetable creation. It is surprising that what seems, for instance, to be the obvious function of stamens and pistils was not elucidated until 1694, and that the great Tournefort, until his death in 1708, "was still convinced that stamens were purely excretory organs". The problems were, and are, numerous and interdependent: a satisfactory standardized morphological terminology was the prerequisite of a sound system of classification, and neither was possible without an understanding of the structure and function of the organs involved.

Such an understanding was, at best, superficial until improved lenses and microscopes could supplement the limited capacity of the unaided eye, and until a more complete grasp of physics and chemistry allowed accurate analysis of the workings and products of minute factories hidden in plant cells. The fact that much remains to be done is proof not of indolence on the part of botanists, but rather of the almost infinite complexity of the plant world, and of the necessity for cooperation between all branches of science if, and if ever, botanists are to unveil the whole truth.

With a vast increase in data, the subdivisions of a science tend to drift apart, and this disintegrating process is at least retarded, if not halted or reversed, by an historical survey of the subject as a whole. Professor Morton's concise history of botanical science virtually ends with the beginning of the present century. By then present-day botany had taken shape, so that even if cytologists, geneticists, ecologists and phytochemists (among others) feel, with some justification, that their achievements have been underrated, it must none the less be conceded that any attempt to chronicle, in a readable way, the many facets of recent research, would almost certainly have unbalanced the volume. It is, as it stands, an admirably succinct account of a science which, however fascinating to its devotees, is rarely presented in an acceptable way to the general public. The style is straightforward, neither condescending nor esoteric, and I found the supplementary notes, neatly set out at the end of each chapter, a refreshingly informative gloss on what had gone before.

Who, then, are the really great among botanists? Having read this volume, the temptation to list the candidates is almost irresistible to a systematist. Linnaeus clearly saw himself as *facile princeps*, and the retiring Robert Brown was so dubbed by his contemporaries; others will favour Cesalpino, Ray, Grew, Malpighi, Hales, de Saussure, Adanson, or one of the many eminent nineteenth-century German investigators. Professor Morton, although he may have his own favourites – and perhaps some forgotten names among them – does not encourage such idle, and indeed trivializing, speculation. Nor is he partisan, as many botanists are, in vaunting the achievements of one particular discipline in the development of the science as a whole. This lack of bias, admirable in a scientist, doubly so in an historian, is not the least of the attractions of this attractive book.

R. D. Meikle

R. D. Meikle is principal scientific officer in the Herbarium at the Royal Botanic Gardens, Kew.

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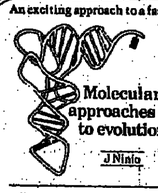

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BOOKS

BIOLOGICAL SCIENCES

Adrift in a gene pool

The Expanding Circle: ethics and sociobiology
by Peter Singer
Clarendon Press: Oxford University Press, £6.95
ISBN 0 19 824646 3

Evolution has not been good to morality. Darwin believed that our morals had advanced as the increasing tenderness of human sympathies was diffused by habit and instruction, but the barbarous atrocities of our age cast an appalling shadow across that picture, and few of us are nowadays inclined to place much faith in progress. Peter Singer's point of departure in this work seems more akin to T. H. Huxley's theory of evolution than that of Darwin, at least in so far as Huxley came to perceive our ethics not as stemming from natural selection but as invoked to combat it.

Much of contemporary sociobiology, according to Singer, is in fact premised upon a naturalistic fallacy that our principles are grounded in biological traits, whereas moral issues, he claims, can never be settled with reference to scientific explanations of organic life. Taking it for granted that evolution has to do with a struggle for existence among genes, Singer addresses himself mainly to sociobiological accounts of kin, group, and reciprocal altruism, which attempt to show how self-sacrificial conduct could be naturally selected by promoting the survival of an altruist's genes in those related creatures which benefit from its sacrifice. But such explanations of unselfish animal behaviour do not point towards a natural foundation of ethics, he argues, since the morality of our species depends upon each person's exercise of his impartial reason in assessing the consequences of his actions, rather than upon any particular distribution of genes.

Altruism conceived as a term of ethics, moreover, ought to extend well beyond our siblings, Singer observes. Indeed, it should extend even beyond the whole of mankind to incorporate every species whose members can be affected by our actions, so that, in his prescriptive alternative to sociobiology, he would have us widen the circle of altruism to include animals too, though not insentient plants, just as in all ethically rational societies it has already come to embrace blacks.

The Expanding Circle is written in a plain and direct style for lay readers of moral philosophy, few of whom, however, will learn much from it about sociobiology. In essence the book forms a critique of that science only to the extent that it purports to explain the behaviour of certain populations through patterns of genetic or kin selection most commonly called "inclusive fitness", which, Singer claims, confounds with a theory of genetic determinism. But quite a few sociobiologists even doubt whether animal behaviour can be best understood through the operation of genes, and no one could guess from this work that most sociobiologists have grave reservations about the genetic determination of human affairs. For his impression of that discipline Singer relies overwhelmingly upon the views of E. O. Wilson alone, and Wilson's extraordinary accounts of the behaviour of man – for instance, his suggestion that homosexuals may be altruistic transmitters of genes who, by performing domestic chores, improve their siblings' prospects for successful reproduction – are allowed to pass the test of scientific explanation without demur.

Singer swallows spurious bait like this whole, in fact, with the exception of some pathological conditions not a single characteristic of human behaviour has so far ever been traced to a genetic source, and to that extent the whole of Singer's moral critique of the subject begs what is still scientifically in question. Our faculties and capacities must of course be rooted in our genes, but this is a quite different matter.

Much of the undigested information imparted here – such as the thesis that chimpanzees have managed to bridge the linguistic gulf between humans and animals – is in any case false, while Singer's accounts of the failure of religion and social contract theory to provide a secure foundation for ethics are wildly misleading. This is not to deny the impressive moral conviction which underlies his remarks, nor the admirable strength of feeling that informs his concern, say, for the welfare of animals. Many readers may also appreciate his gallant use of the feminine pronoun in all his hypothetical illustrations of the behaviour of mankind in general.

The work seems eccentric and odd, however, not for these reasons but because of its remarkably abstract tone, as if ethics, once divorced from biology, had simply to do with a generalized concern for the welfare of every animal species. The argument would profit greatly from some focus upon the multifarious political and social dimensions through which human altruism and, more particularly, the lack of altruism are characteristically identified and understood. With our posture less than generic spirit of goodwill once again in conspicuous decline, there is an unwarranted tone of optimism here about the likely extension of altruism from the whole of mankind to all living creatures which, though it may to that extent recall Darwin's auspicious views, is regrettably out of step with our time. Some resolute ecologists may well take to this book, but natural selection could ensure that others leave it like so much water under the bridge, a red herring cast adrift in a great pool.

Robert Wokler

Robert Wokler is lecturer in government at the University of Manchester.

British bryophytes

The Biology of Mosses
by D. H. S. Richardson
Blackwell Scientific, £9.80
ISBN 0 632 00782 6

British Mosses and Liverworts, third edition
by E. V. Watson
Cambridge University Press, £25.00 and £12.95
ISBN 0 521 24004 2 and 28536 4

Different aspects of the increasing interest in bryophytes (mosses and liverworts) in Great Britain over the past 20 years is reflected in two new books. The first presents a refreshing account of mosses, emphasizing their biology rather than giving detailed accounts of morphology and anatomy, a characteristic of earlier books.

The opening chapter briefly introduces structure, history of study and geological history. Succeeding chapters then deal with water relations (with particular reference to desiccation tolerance, a notable feature of many moss species); photosynthesis, temperature and nutrients; sex and cytogenetics (describing life cycles, dispersal of male gametes and fertilization); sporophyte development and spore dispersal; and spore structure and germination and the development of the gametophyte stage of the life cycle. A basic knowledge of mosses and of biological processes is assumed, but an adequate glossary is provided. The section on cytogenetics is inadequate.

The remainder of the book, except for one chapter on ecology, deals with the actual or potential use of mosses. A chapter on moss-animal associations discusses the nutritive value of mosses, types of vertebrate and invertebrate consumers, and the use of mosses as protection and camouflage. This is followed by a brief chapter on mosses and associated microorganisms, including bacteria, protozoa, fungi and blue-green algae.

Ecological aspects, however, are given less comprehensive treatment and there are some serious omissions. *Sphagnum* is mentioned only in passing, despite its ecological importance; it accounts for one to two per cent of terrestrial biomass and has had a profound influence on the flora of the cooler parts of the northern hemisphere. Air pollution by sulphur dioxide, fluorides, ozone and heavy metals and the use of mosses in pollution monitoring and geobotanical prospecting are taken up in chapters ten and eleven.

A final chapter provides a fascinating account of the use of mosses by man, both past and present, and also deals briefly with conservation. Numerous excellent figures, and photographs and a comprehensive bibliography enhance the book.

It is unfortunate, however, that the author has restricted himself to mosses. The inclusion of the liverworts, the other large class of bryophytes, would have made the book much more appealing. Despite this, the author has succeeded in collating a wealth of information from a wide variety of sources, often not readily available. Written in a clear and very readable style, and though aimed primarily at university students, the book should be of considerable interest both to amateur and non-specialist professional biologists.

Dr Watson's already very successful work is aimed at enabling both the beginner and the bryologist of some experience to identify the commonest British bryophytes. Revisions are relatively minor: nomenclature has been brought up to date; notes are provided on an extra few genera for which taxonomic treatments now differ from those previously used and there are brief additional notes on two liverworts and 24 mosses, which also appear in the key to species at the beginning of the book. Complete accounts of species, however, remain unchanged.

The book is now quite bulky, covering nearly 340 species as against 450 in the original. This makes the key very long and more difficult to use. Judicious pruning would have made the book more acceptable to beginners, while detracting very little from its considerable value to the more advanced student. None the less, it is still the only elementary work on European bryophytes in English.

A. J. E. Smith

A. J. E. Smith is reader in botany at University College of North Wales, Bangor.

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BOOKS

BIOLOGICAL SCIENCES

A natural revolution

Charles Darwin: a man of enlarged curiosity
by Peter Brent
Heinemann Educational, £12.50
ISBN 0 434 08595 2

The Development of Darwin's Theory: natural history, natural theology and natural selection, 1838–1859
by Dov Ospovat
Cambridge University Press, £20.00
ISBN 0 521 23818 8

Charles Darwin died at his home in Kent on April 19, 1882, aged 73. A week later he was buried in Westminster Abbey, largely as a result of his cousin, Francis Galton, importuning various members of the establishment: Darwin himself had expected to go no further than the local churchyard at Downe. At the funeral, the abbey choir sang an anthem composed by their organist, Frederick Bridge, with words taken from the third chapter of Proverbs: "Happy is the man that findeth wisdom". Did Darwin find wisdom? Or did he die wracked by disease and doubt? Even worse, was he an anti-Christ destined to lead millions astray, and produce anarchy after the settled order of late Victorian *Pax Britannica*?

The reason for the persistence of Darwin's ideas, and the best response to those who regard him as a generator of disaster, is that Darwin was an extremely good naturalist in the old-fashioned sense of the word: able to embrace and tease out the significant interactions of the phenomena he studied. In this respect he differs from and rises above the reductionist trait (illegitimately transferred to biology from the so-called exact sciences) of rather easily obscuring a problem by concentrating on particular limited aspects of it. But is this enough to explain what made Darwin the success he was, the man who changed biology from a static science fixed by God in a week's frenzied creation in 4004 B.C. into one where change and stress produce constantly shifting equilibria?

Two new books go a long way towards answering this question: Peter Brent's *Charles Darwin* is a straightforward biography, describing Darwin's life, friends, problems and contributions; the late Dov Ospovat's *The Development of Darwin's Theory* is a dissection of the changes and influences that Darwin's ideas underwent during the 21 years between 1838 (when his theory of natural selection is generally believed to have been completed) and 1859 (when the *Origin* was finally published). In very different ways, these books illuminate the scientific enterprise by concentrating on one particular manifestation of it.

Darwin threw very little away, and the bulk of his papers are now in Cambridge. Both Brent and Ospovat have exploited the Cambridge archives, although Brent in particular has used a wide variety of sources. This mine of information is radically changing the standard picture of a self-critical and hesitant *pater familias*, based largely on the *Autobiography* Darwin wrote for his children in 1876 and which has been the starting point for most subsequent biographers and historians.

Modern Darwinian historical scholarship got under way in the 1960s with transcriptions of Darwin's *Journal* and *Notebooks* on *The Transmutation of Species* by Sir Gavin de Beer and his colleagues. De Beer himself wrote a biography (*Evolution by Natural Selection*, 1963) which balanced Darwin's science and its development but did not differ significantly from earlier accounts. Around this time professional historians began to take an interest in Darwin. Important books by Gillespie, Stauffer, Kohn, Ruse, Hull and Moore have appeared in the past ten years or so. Ospovat's work is the most recent of this tradition. Looking beyond Darwin, he traces how concepts in natural history, palaeontology and embryology changed during the mid-nineteenth century; relates how Darwin immersed himself in dialogue with his peers in the Geological, Linnean and Royal Societies; and shows that Darwin refined his ideas considerably between 1844 and 1859, realizing that adaptation is not perfect and that variation is of prime importance.

Ospovat is writing as a historian for historians. By placing Darwin firmly in his historical context, he documents something largely ignored or unknown in the conventional view of Darwin's work, that "a quiet revolution was taking place around Darwin while he worked on his theory of natural selection. Its authors were his professional colleagues, with whom he long shared many basic assumptions. Its new ideas made a substantial contribution to Darwin's evolutionary synthesis." It has been said that an interest in history often proves the end of productive research for scientists. This may be true, but it is encouraging and important to realize that revolutions like Darwin's tend to be wrought by workers open to contacts, ideas, criticisms and facts rather than by ivory tower aspirants. The most virulent critics of Darwin in his own time came from biologists, locked into their own specialities; and the most persistent critics are still armchair reductionists and theoreticians, rather than true natural historians.

Peter Brent writes for a much wider audience than Ospovat, and he has produced a very readable book. His background for this is distinctly unlikely: his previous books have been on Hindu mystics, Scott of the Antarctic, T. E. Lawrence, Mungo Park, and the like. These interests come out in rather unsuccessful purple passages:

> What events had punctuated the vast aeons geology was now proposing? What tremendous moment had preceded them .... It must have seemed to Darwin, as he put the letter down, as if the jaws of the future had at the last moment relented; posed to devour him, they had relaxed into a smile. The pretty parsonage with its dutiful wife, its necessary children, and its ordered existence had, apparently receded ....

In general, however, Brent's biography is immensely readable and informative. More important, it gets away from the bonds of Darwin's interpretations of himself for his children, and shows the depth and extent of his contacts with Owen, Lyell, Henslow, Hooker, and others. In other words, Brent does for the general reader what Ospovat does for the specialist. It seems likely that *a man of enlarged curiosity* (the phrase comes from a letter of Josiah Wedgwood II, Darwin's father-in-law, pointing out the opportunities that would come if Darwin accepted the invitation to serve as naturalist on the *Beagle*) will be the definitive background to Darwin for many years. It can be recommended to everyone with an interest in the history of biology.

R. J. Berry

R. J. Berry is professor of zoology at University College London. His own book, Neo-Darwinism, *and a collection of essays edited by him for the Linnean Society to commemorate the centenary of Darwin's death, will be published in 1982.*

Toying with ideas

Animal Play Behaviour
by Robert Fagen
Oxford University Press, £21.00 and £10.50
ISBN 0 19 502 760 4 and 761 2

Animal play has until recently been one of the most neglected areas of behavioural research, and Robert Fagen's book is the first comprehensive, single-author volume on the subject to be written in recent times.

Readers already familiar with Fagen's innovative and sophisticated contribution to the study of animal play will come to this book expecting to be challenged and stimulated, to have new ideas thrown at them and old ones trampled on. They certainly will not be disappointed in this respect, for this is clearly the work of a virtuoso, but they may also be exasperated by its eccentricities and disappointed by its omissions.

The book is overwhelmingly evolutionary in its approach. To Fagen, the most important question that can be asked about animal play is "How did natural selection act during evolutionary history to produce play with the characteristics that are observed in the animal kingdom today?" Fagen clearly expects "experimental psychologists and traditional ethologists" to be opposed to this approach, and to prefer more mechanistic methods of analysis. I think he is right to expect such opposition, but perhaps not for the reason that he imagines.

Many biologists, including myself, would argue that it is perfectly valid to study animal play, or any other aspect of behavioural development, from an evolutionary viewpoint, but that such an approach cannot solve questions about the immediate mechanisms that control behavioural development. In his book, Fagen often, but not always, gives the erroneous impression that evolutionary and mechanistic explanations are rivals, and that we must expect biologists to squabble over which of these two approaches does the better job. Both are, in fact, essential because they address different problems, and to pretend otherwise is to invite confusion.

Early in the book, Fagen argues strongly that what the study of animal play most needs at the moment is more theory (by which he means evolutionary theory) rather than more data. He argues that data on play have in the past been collected aimlessly, and that a strong new theoretical framework is needed to give direction to future work. From an evolutionary point of view he is probably right. Past attempts to explain the adaptiveness of play have been on the whole naive and unconvincing. In the latter half of the book he develops truly impressive evolutionary models of play, whose predictions will keep those in the business of data collection occupied for years.

Yet he is quite wrong, from a developmental point of view, to suggest that data have in the past been ahead of theory. Since at least the 1960s people have hypothesized that play promotes the development of physical and social skills of the young animal, and yet to this day the direct experimental evidence that this is so is still pitifully weak, and there is still astonishingly little evidence on the mechanisms by which play might achieve any such effects. Fagen's own summaries of this evidence in a chapter entitled "The effects of play", together with his frequent pleas in the latter parts of the book for more data, convincingly contradict his own argument.

This is not the easiest of books to read, despite occasional passages of eloquence, and its balance is curious. A very long chapter on the natural history of play is little more than a catalogue of qualitative descriptions of play in mamals and birds. By the thirtieth or fortieth description of young animals jumping, butting, and so on, the attention tends to wane. Also, readers without mathematics will find the models that are discussed later in the book heavy going, especially as the notation used is explained very briefly, and in places, not at all.

Despite these reservations, there is no doubt that this is an important book, and one that will stimulate argument and future research for years to come.

Neil Chalmers

Neil Chalmers is senior lecturer in biology at the Open University.

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Authors of textbooks and lecturers have wrestled with the problems of what are the essential components of physiological ecology, now revamped as environmental physiology, but no clear-cut agreement has been reached.

One approach begins with a basic understanding of the physiological processes which can then be applied to ecological problems. The alternative approach relies on ecological effects to stimulate the reader into studying the physiology and biochemistry in order to quantify and explain those effects. In considering some of the same material, these two books illustrate these different views, but in widely differing styles.

Fitter and Hay to some extent resolve the problem by relating the physiological and biochemical similarities of plants to their behaviour in ecologically diverse habitats. As a result, however, the discussion of the basic physiological processes involved in the acquisition of mineral nutrients, water and light, and in responses to environmental stress, leaves too little space for a detailed account of plant adaptations. In many ways, the book is similar to others dealing with basic concepts. What is missing is an account of the subtle physiological and biochemical differences between plants, but I would also have expected a greater emphasis on the diversity of plant species and the great variety of habitats available for colonization. All too often the examples chosen are from standard European locations while omitting the challenges from the ecological spectra in South America, USSR, Africa and Asia that still await detailed explanations. This criticism applies throughout the book, although occasionally several interesting examples are mentioned but with no apparent understanding of their significance.

After a brief introduction to environmental ecology, section two covers concisely the acquisition of resources, including chapters on light, mineral nutrients and water. The chapter on light examines relevant topics, ranging from the light environment to the effects of radiant flux density. However, leaf morphology and its relevance to photosynthesis, though mentioned, could have been discussed at greater length, and the concept of changes in morphology and the consequent influence on light interception could also have been developed further.

The discussion of mineral nutrients, following standard practice is concerned with the physiology of ion uptake and relevant aspects of the soil solution. Differences of mineral content between and within species are briefly covered, and relationships between root morphology and mineral nutrients are outlined. However, as each topic is treated somewhat separately, the relevance of different root morphological characteristics to possible species differences is scarcely considered. As these issues are not new, the presence of mature insight could be the only justification for their inclusion in a book of this size and scope. Nevertheless, due attention is given to both soil micro-organisms, mycorrhiza, and the concept of the root rhizosphere and its relevance to nutrient uptake.

Section three considers plant responses to environmental stress, a particularly useful chapter being concerned with the effects of temperature on plant growth, especially at low temperatures. Coverage of ionic toxicity is uneven and all too brief, and some of the generalized aspects of toxicity, such as saline and sodic soils, calcareous and acid soils and metal-contaminated soils are not illustrated by suitable examples.

A final chapter, dealing with various interactions between plants and other organisms, is satisfactory but unsophisticated particularly on plant defence mechanisms and their relevance to insect attack.

Although the book is worth consulting, there is still a need for an imaginative in-depth study of plant responses to environmental stress.

Bradshaw and McNeilly's short and well written book will readily appeal to a wide spectrum of students and researchers interested in pollution problems. Compared with Fitter and Hay's book, the coverage is certainly narrower and somewhat superficial in parts but the data have been presented in a stimulating way. The exposition is clear and ideas are carefully introduced.

The essential components of Bradshaw's own research papers on the evolution of metal tolerance in plants on recent mine spoils, comprise many of the examples chosen. However, the discussion is not restricted to an account of this topic: evolutionary adaptation of plants to sulphur dioxide, ozone, nitrogen oxides and selective herbicides are also given satisfactory, though incomplete, coverage.

As an introduction to evolution in present-day polluted landscapes, this worthy addition to the Institute of Biology's series can be safely recommended.

P. J. Peterson

P. J. Peterson is Director of the Monitoring and Assessment Research Centre and professor of environmental biology at Chelsea College, London.

Primary process

Chloroplast Metabolism: the structure and function of chloroplasts in green leaf cells
by Barry Halliwell
Clarendon Press: Oxford University Press, £20.00
ISBN 0 19 854549 5

Photosynthesis is the primary anabolic process which ultimately sustains all life, a view that would receive unanimous agreement among scientists. Yet the number of textbooks on the subject is very limited. Of the handful of recent volumes concerned with photosynthetic processes, this treatise provides possibly the most comprehensive review of the enzymes involved in carbon metabolism in the chloroplast. The author has an expert working knowledge of this area and presents an objective up-to-date appraisal of the enzyme pathways of the stroma and their regulation. His discussion of some aspects of chloroplast structure and biochemistry, such as the thylakoid and envelope membranes and the molecular biology of the chloroplast genome, is adequate but rather brief. If viewed from the perspective of structure-function relationships these topics could have been successfully elaborated without unnecessary repetition of previously published work. This is particularly true with respect to the Z-scheme, which can be misleading when discussed without regard to the arrangement and spatial separation of photosystems I and II in the granal and stromal lamellae.

The book comprises ten chapters each of which includes a commendable list of references. The first two chapters deal with various aspects of thylakoid membrane biochemistry. However, although figure 2.1 is presented as an updated version of the Z-scheme, the Rieske iron-sulphur centre which interacts with plastoquinone is omitted. And as equation 2.1 is virtually identical to equation 1.2 perhaps a more specific reaction centre sequence would have been more informative. Here and throughout the volume the author gives the impression that cyclic electron flow around photosystem I is of little significance *in vivo*, even though there is convincing evidence that appreciable cyclic electron flow can occur in intact chloroplasts. This is especially true under certain conditions, for example, the lag phase of photosynthesis, and is particularly important in the bundle sheath chloroplasts of some C4 plants.

Chapter one also includes a valuable section on chloroplast isolation and the problems encountered with the localization of enzymes in the chloroplasts. Figure 1.5 provides sound practical guidelines which will be of assistance to workers in this area. However, in giving a historical perspective of chloroplast isolation it is misleading to suggest that the chloroplast preparations of the 1960s, accomplished with a return to Hill's use of a sugar osmoticum combined with careful maceration and separation, produced type B chloroplasts. These preparation procedures, which are virtually identical to those in use today, almost certainly yielded type A chloroplasts.

Chapters three and four contain an excellent description and discussion of the Calvin cycle and its regulation. Chapter five (with its excellent photographs) summarizes the C4 pathway and crassulacean acid metabolism (CAM). From a historical viewpoint, however, the discussion of the latter without reference to the work of Thomas is rather like the tricarboxylic acid cycle without Krebs. The author's suggestion that phosphoenolpyruvate (PEP) carboxylase has "a much higher affinity for carbon dioxide (as bicarbonate ion) than has the ribulose diphosphate carboxylase", is highly questionable. It would seem most likely that the affinities of the two carboxylases for carbon dioxide are at least of the same order and that of PEP carboxylase may well be lower than that of ribulose diphosphate carboxylase. It would also be more appropriate to use the more descriptive term bisphosphate rather than diphosphate.

Chapter six contains an essential discussion of the selective permeability properties of the chloroplast envelope. There follows two expert reviews on photorespiration and the inhibitory action of oxygen on chloroplast metabolism. In both these fields the author has made a significant scientific contribution and he provides a valuable insight into these topics which are of prime importance to plant productivity. Chapters nine and ten deal with biosynthetic processes of the chloroplast metabolism other than carbon metabolism. Though informative and up to date, these chapters could have been improved had a section on protein synthesis been included.

Figures are generally comprehensive and of a high standard. One or two, however, are rather poorly conceived and difficult to follow: for example, figure 10.1 on nitrate assimilation; and figure 5.3 on the C4 pathway, which could have been improved with some indication of compartmentation.

Criticism of some points in the text, however, does not detract from the overall good standard of the work. This very readable book will undoubtedly be useful to students and research workers. The author's straightforward approach and simple literary style should lead to a ready understanding of even the more complicated processes of photosynthesis.

C. H. Foyer

C. H. Foyer is a member of the ARC's Research Group on Photosynthesis at the department of botany, University of Sheffield.

An epitome of the New Forest. This illustration, which appeared in 1811 in a book on the Forest by Percival Lewis, shows four of its facets: the shield and arms indicate that it is a Royal Forest; timber production is shown by the timber feller with his axe and the felled trees; hunting is implied by the deer and two hounds; and shipbuilding is represented by the ship under construction. Taken from A History of English Forestry, by N. D. G. J James.

The official forest

A History of English Forestry
by N. D. G. James
Blackwell, £19.50
ISBN 0 631 12495 0

Management of trees and woodland has been part of civilization since the Neolithic period. Three kinds of evidence bear on its history. Physical evidence is embodied in existing trees and woodland, timbers of ancient buildings, excavated wooden objects, pollen deposits, and so on. Workaday documents record what trees and woods grew in particular places and what was done with them on specific occasions. And, since trees arouse strong feelings, there are abstract documents about what ought to be done with them: complaints, exhortations, regulations, textbooks and academic generalizations by early writers. Abstract documents – a record of perceptions, theories, hopes and intentions but seldom of action or of consequences – have an unreasonable fascination for scholars. In parallel with forest history there develops a "pseudo-history" of what people have *said* about forests.

The first half of this book deals with medieval royal Forests; the second half with the development of modern forestry from 1600 onwards. The two themes have little in common but the name: medieval Forests were places of deer rather than trees.

Mr James, despite his long and distinguished practical experience as a land agent and as past president of the Royal Forestry Society, writes as an administrator about laws and bureaucrats, theories, polemics, textbooks and other people's generalizations. There are only meagre and disconnected glimpses of workaday documents; still less does the author put on his boots and tell us of fieldwork and archaeology. Vast areas of the subject are therefore omitted and traditional misapprehensions pass unchallenged. Early laws are taken at face value without considering how often prosecutions occurred and with what result. The book subscribes to the theory that "Forests were" reserved to the king for hunting", yet gives no contemporary account of any medieval royal hunt. Two chapters trace the boundaries of Forests (the only extensive detail in the book), but without making clear that these were merely administrative boundaries of no topographical value.

The medieval and earlier management of private woods is one of the great success stories of the countryside. Hundreds of woods had the same boundaries and management in 1950 as they had had 700 years before. They were taken for granted and seldom discussed in the abstract, and thus do not exist for this book. Mr James supposes that woodmanship was called into existence by Act of Parliament in 1543 and the principle of sustained yield was invented by Evelyn in 1664: so might one suppose that gravity went unnoticed before Newton.

The second half of the book is less about actual forests or foresters than about polemical writers, statutes, commissions, committees, reports, interim authorities, policy statements, etc, etc. Where are the lively practicalities that authenticate George Ryle's *Forest Service*? Naval shipbuilding is much overemphasized: the Navy's difficulties with timber were really due to lack of funds rather than of trees. Important questions of philosophy are not raised. How did forestry in Britain, unlike the rest of the world, become so exclusively interested in artificial plantations? How did the arithmetical procedure of Net Discounted Revenue come to be thought respectable and to determine policy? Anyone concerned with the modern landscape will look in vain for a discussion.

The great developments in the study of topographical history in the past twenty years are almost ignored. Mr James has written half a substantial book on medieval Forests without mentioning C. E. Hart's work on the Forest of Dean (1966), which tells us how a Crown-owned Forest really worked in practical detail, nor C. R. Tubbs's work on the New Forest (1968), nor H. E. Boulton's on Sherwood (1965). This is not an especially bad book, for two-thirds of the world's forest historians are concerned with forestry policy and only one-third with real forests; but coming from so eminent a forester and scholar it is a sad disappointment.

Oliver Rackham

Oliver Rackham is author of Ancient Woodland: its history, vegetation and uses in England, *and a fellow of Corpus Christi College, Cambridge.*

NOTICE BOARD

Noticeboard is compiled by Patricia Santinelli and Mila Goldie

Chairs

Manchester
Mr Maurice Langson, honorary lecturer in virology, consultant virologist at the North Manchester Regional Virus Laboratory, the Manchester Royal Infirmary and Booth Hall Children's Hospital and consultant virologist to the Manchester Public Health Laboratory Service has been appointed to the chair of virology at the University of Manchester. The chair was previously held by Emeritus Professor T. S. L. Beswick.

Appointments

Universities

City University, London
Pro-vice-chancellor: Professor P. K. M'Pherson.
Honorary visiting professors: C. H. Bedwell (civil engineering); Dr W. A. Perry (mechanical engineering). Professor A. P. David (mathematics).
Senior Lecturers: H. R. Klein (centre for arts and related studies); R. Jewitt (systems science); Dr W. J. Morris (civil engineering); S. G. Res (centre for banking and international finance).
Lecturers: W. J. Hill (lecturer and computer manager in systems science and physics); A. M. C. Leeming (business school); Miss N. Stathopo and Miss E. M. C. Canton (centre for legal studies).

London School of Economics and Political Science
Professor Alan Day, professor of economics, has been reappointed as Pro-Director from October 1, 1982.

Oxford
Henley Henson lecturer in theology: the Reverend Canon S. W. Sykes.
Reader and director of transport studies: Philip Bramley Goodwin.

Strathclyde
Visiting professors: Professor David L. Hamblend (National Centre for Training and Education in Prosthetics and Orthotics). Professor Lipman (applied physics).

York
Colin Runciman, formerly research assistant in the department of computer science, to be appointed lecturer in the department from October 1, 1982.

General

The United Nations University has appointed two new vice-rectors to take up office early in 1982. They are Mr Edward Pfoman, who will become vice-rector for Global Learning and Dr Miguel Urrutia who will become vice-rector for Development Studies.
Mr Hywel James, currently assistant registrar for art and design at CNAA, has been appointed Registrar for Art and Design from April 1, 1982.
The Scottish Library Association appointed its new president, Michael Head on January 25. Mr Head has spent 12 years in Aberdeen as senior lecturer at Robert Gordon's Institute of Technology.
Mr Neville Griffin, the Prime Minister's Deputy Chief Press Secretary, has been appointed Head of Information at the Department of Education and Science. He will take up his appointment in March.
Sir Ralph Verney has become a trustee of the School of Water Sciences, High Wycombe. He succeeds Dr Erasmus Barlow, who has relinquished the post in order to concentrate on his work for the Zoological Society of London.
Dr Alastair Wood has taken up appointment as Head of the School of Mathematical Sciences at National Institute of Higher Education, Dublin. He is a Fellow of the Institute of Mathematics and its Application.

Degrees for Alicia Markova, Ted Hughes and Patrick Heron

Honorary degrees

Aberdeen
The following are to be awarded honorary degrees in July:
DD: The Rev Andrew Stewart Todd, minister of the Cathedral of St Machar, Old Aberdeen: The Rev Professor Robert McLachlan Wilson, professor of biblical criticism at St Andrews University.
LLD: Professor Derek C. Burke, professor of biological sciences at Warwick University. Mr Donald McDonald Gordon, until recently ambassador to Austria. Professor Dame Sheila Sherlock, professor of medicine at the Royal Free Hospital Medical School, University of London.

East Anglia
The following are to receive honorary degrees in July:
DCL: Mr Francis John Hill, former county education officer for Suffolk.
LittD: Professor Norman Haycocks, formerly professor of education at the University of Nottingham. Professor Eric Hobsbawm, professor of economic and social history, Birkbeck College, University of London.
DSc: Professor James Lovelock, independent consultant scientist. Professor Glaude Shannon, Donner Professor of Science, Massachusetts Institute of Technology.
DMus: Dame Alicia Markova, prima ballerina.

Exeter
The following are to be awarded honorary degrees in April:
Litt D: Mr M. G. Brock, warden of Nuffield College. Mr Patrick Heron, the artist.
DSc: Sir John Kendrew, director general, European Molecular Biology Laboratory, Heidelberg. Professor Sir David Phillips, professor of molecular biophysics, Oxford University.
The following will be awarded honorary degrees in July:
LittD: Mr Ted Hughes, poet and author.
DSc: Dr L. L. Iversen, director of the MRC Neurochemical Pharmacology Unit, Cambridge.

Fortheoming events

"France Today", a travelling exhibition of French publications on contemporary themes is to be held in Aberdeen from February 22 to March 5 in the Music Hall, Union Street. It comprises 500 titles broadly representing social sciences, politics and history. Information from Neville Wood, School of Librarianship, Robert Gordon's Institute of Technology, St Andrew Street, Aberdeen AB1 1HG.

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The International Society for Research on Sex Education is holding a two day conference at the University of London Institute of Education on March 25–26. Topics include sex education in schools, the medical profession and the community, family planning and sex therapy. Contributions from Africa, Latin America and Europe as well as the UK. Information from Dr John Rust, International ROSE, 25 Woburn Square, London WC1 0AA.

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"Digital Filtering with the FAD Chip", a Polytechnic of Central London four-day course, March 2–5, features a mixture of lectures, design problem sessions, and hands-on FAD-based filtering exercises. The course is suitable for both newcomers to the digital signal processing field and those more experienced with earlier methods of digital filter realization. Information from Nelia Swallow, PCL Short Course Unit, 309 Regent Street, London W1.

• • •

Community Initiatives and Transport Issues", a one day seminar and workshop on the role of local transport in community development processes, March 4, 10.00 to 16.30 in the Chancer Building, Trent Polytechnic, Nottingham. Details from John Sutton, Department of Town and Country Planning, Trent Polytechnic.

Open University programmes February 27 to March 5

Saturday February 27

BBC1
6.25 Contemporary issues in education Ayer at Ease (E245: prog 2)
6.50 Curriculum design and development Tanzania: Education for Self-Reliance. Part 1 (E203: prog 1)
7.15 Shaping and society. Schooling for the Masses (E202: prog 1)
7.40 Patterns of mathematics. Number Now and Then (MA1209: prog 1)
8.05 Ideas and beliefs: community relations. Coloniding in Reverse 2 – Mother Countries (E351: prog 3)
8.30 Popular culture: Television and Christmas. Constructing the Past (U203: prog 2)

BBC2
9.20* The nineteenth century novel and its legacy. Mansfield Park – improvement (A312: prog 1)
9.40* Poetry: Keplers War (U202: prog 12)
9.50* Introduction to pure mathematics. Maps (M203. prog 2)
10.40 Children's literature: poetry. "Old Love's Domain": Thomas Hardy and Cornwall (A306: prog 2)
11.05 Materials under stress. Tools of the Trade (T361: prog 1)
11.30* Arts foundation course. Uses and Abuses of Argument on Television. Programme 1 (A101: prog 2)
11.55 Education and the urban environment. Tower Hamlets (E361: prog 1)
12.20 Numerical computation. Finding Roots of Equations (M252: prog 3)
12.45 Social work, community work and society. Social Work In Action (DE208a: prog 17)
12.10* The Romantic imagination: revolution and evolution. The Origin of the Earth (E237: prog 1)
12.35* The Enlightenment. Products and Plants: Exchanged Through Foreign Eyes. 1725–1750 (A204: prog 1)
1.00 Mathematical models and methods. Population Modelling (MST204: prog 3)
1.25 Understanding space and time. As Surely as Columbus Sailed (U203: prog 1)
1.50 Social psychology. Psychosexual Differences: 2 (D305: prog 2)
2.15 The rise of modernism in music. "Are My Eyes on Wrong? – A Profile of Charles Ives (A308: prog 3)
2.40 Technology: an interdisciplinary approach. Setting Things Up (MDT2341: prog 1)
3.05* Seventeenth century England: a changing culture 1618–1689. Architecture and Society. 1: Palaces in the Earth (A303: prog 11)
3.30* Cognitive psychology. Defining the Field (D301: prog 2)
3.55 Food production systems. Monitoring World Food Production (T273: prog 11)
4.20* The earth's physical resources. Resources and Reserves: Some Basic Concepts (S206: prog 1)
4.45 Systems organization: the management of complexity. The National Theatre – Whose System is it? (T243: prog 1)

RADIO 3 (VHF)
6.55* Genetics. Pure and probabilities (S299: prog 1)
6.15* Oceanography. The Map of the Ocean Floor (S331: prog 1)
6.35* Decision making in Britain Public Expenditure The New Austerity (D203: prog 3)
6.55 Man-made futures: design and technology. Technology and Society (T282: prog 11)
7.15 Arts foundation course Why We Should Reason Well (A100: prog 2)
7.35* Mathematics foundation course. Foundation Maths (M101E: prog 1)
8.20 Open Forum 3
8.40* Research methods in education and the social sciences Research and Policy (EE294: prog 1)
9.00 The development of instruments and their music. The French Organ Tradition (A304: prog 2)
9.40 Thought and reality: central themes in Wittgenstein's philosophy. Thought and Reality (A402: prog 1)

Sunday February 28

BBC1
8.25 History of architecture and design 1890–1939. Charles Rennie Mackintosh: Hill House (A305: prog 3)
8.50 Elements of music. Score Reading (A241: prog 1)
9.15 An introduction to sociology. Eileen Barker meets the Moonies (D207: prog 1)
9.40 Fundamentals of human geography. Land Use Change in Southern Ontario (E251: prog 2)
10.05 Environmental control and public health. Clean Air Success (T272: prog 11)
10.30 Decision making in Britain. Cuscorde Case Study 2: Counting the Cost (D203: prog 2)

BBC2
8.25* Biology, brain and behaviour. Biology, Brain and Behaviour: Introduction (SD286: prog 1)
8.50 Systems performance: human factors and systems failures. Search and Rescue (TD342: prog 1)
9.15 Ecology, Estuwaite and the Bleltham Tubes (S333: prog 1)
9.40 The nature of chemistry. Stereochemistry: "Conformations" (S304: prog 11)
10.05 Mechanics and applied calculus. Modelling with Vectors (MST282: prog 1)
10.30* Science foundation course. Measuring the Earth and the Moon (S101: prog 2)
10.55 Social science foundation course. Levels of Measurement (SD282: prog 2)
11.20 Mathematics foundation course. The Binomial Theorem (M101: prog 2)
11.45 The digital computer: Data Processing in Action (TN221: prog 1)
12.10* Engineering materials: thermofluids and energy. The Hydraulic Ram (T233: prog 1)
12.35 Telecommunication systems. Modulation (T321: prog 2)
1.00 Biology: form and function. Life on Seashores (S282: prog 1)
1.25 Great Britain 1750–1950: sources and historiography. The Research Project (A401: prog 1&2)
12.15 Industrial relations. The Interested Parties (PT281: prog 11)
12.40 Principles of chemical processes. Solubility (ST294: prog 2)
13.05 Surface and sedimentary processes: case studies in earth science. Geophysical Techniques (S335: prog 3)
12.30* Evolution, Species and Evolution (S364: prog 2)

RADIO 3 (VHF)
8.05 Language in use. Control and Conflict: The Status of French (E263: prog 2)
8.15 Modern art from 1848 to the present styles and social implications. Images of Reality (A351: prog 2)
8.30* Twentieth century poetry. Hardy, and the Ballads (A306: prog 1)
6.05* Personality and learning. Scientific Approaches to Personality (E301: prog 2)
7.15 Microeconomics. Microeconomics and You (D222: prog 1)
7.35 Food production systems. World Food Resources (T273: prog 1)

RADIO 4 (VHF)
6.05 Ethnic minorities and community relations (E354: prog 2)
7.10* Social work, community work and society. Introduction to the Course (DE206: prog 6)
7.35 The Enlightenment. Pope's "Essay on Man" (A204: prog 3)

RADIO 3 (VHF)
22.20* Contemporary issues in education. Ayer at Oxford (E200: prog 2)
23.40* Greece 478–336 bc. Greek Colonisation (A292: prog 1)
24.00 OU Announcements/Music FM
00.20 The nineteenth century novel and its legacy 1814 (A312: prog 2)
00.40 Cognitive development: language and thinking from birth to adolescence. Project Work and the Course (E262: prog 8)

Monday March 1

BBC1
6.40 Science and belief: from Darwin to Einstein. Physics Fallacies? (A381: prog 2)
7.05 Mathematical models and methods. Newton's Laws (MST281: prog 4)
7.30 Greece 478–336 BC: Land and Sea (A292: prog 1)

BBC2
6.40* Mathematics foundation course. The Binomial Theorem (M101: prog 2)
7.05* Materials under stress. Tools of the Trade (T351: prog 1)
7.30 Mathematical areas the curriculum. Who Needs Maths? (PM8233: prog 1)
17.10* Contemporary issues in education. Ayer at Eton (E200: prog 2)

RADIO 3 (VHF)
6.55 Telecommunication systems. Pulse Code Modulation (T321: prog 1)
7.15* Man's religious quest. The Student of Religion (AD298: prog 4)
8.35* An introduction to sociology. Eileen Barker meets the Moonies (D207: prog 1)
8.55 Fundamentals of human geography. Dartmoor: Recreation and Farming (D204: prog 1)
9.20 Arts foundation course. Radio History: An Exercise in Constructive Criticism (A101: prog 3)
22.40* Food production systems. World Food Resources (T273: prog 1)
24.00 Industrial relations. The Interested Parties (PT281: prog 11)
00.20* Reading development. Sounds and Letters (PE231: prog 1)

RADIO 4 (VHF)
22.30 Conflict and stability in the development of modern Europe c 1789–1970. Politics and Society in Germany 1789–1820 (A309: prog 2)
23.50 Mass communication and society. Television Coverage of the Convention – a Critique (DE355: prog 2)

Tuesday March 2

BBC1
6.40 An introduction to psychology. Is It as Easy as ABC? (For E201 Students) (D8265: prog 2)
7.05 Special needs in education. A Dyspleptic Figure. Part 1 (E211: prog 1)
7.30 Systems behaviour. A Question of Interpretation (T241: prog 1)

BBC2
6.40 Introductory electronics. Electronic Design and Signals (T283: prog 1)
7.05 Science foundation course. Motion – Newton's Laws (S101: prog 3)
7.30 The handicapped person in the community. The Handicapped Person in the Community. Am I Being Unrealistic? (P231: prog 1)
17.10.* Curriculum design and development. Tanzania: Education for Self-Reliance, Part 1 (E203: prog 2)

RADIO 3(VHF)
6.55 The development of instruments and their music. The French Organ Tradition (A304: prog 2)
6.15* Contemporary issues in education. Ayer at Oxford (E200: prog 2)
23.20* English urban history 150–1700. English Provincial Towns and Economic History (A322: prog 1)
23.40* Fundamentals of statistical inference. Introduction to the Course (M241: prog 1)
24.00 The digital computer: An introduction to the course (TN221: prog 1)
00.20 History of architecture and design 1890–1939. Frank's Architecture and Design (A305: prog 3)
00.20 Social work, community work and society. On Being a Social Worker (DE204: prog 1)

RADIO 4 (VHF)
23.30 Great Britain 1750–1950: sources and historiography. The Process of Research: An 18th Century Example (A401: prog 2)
23.50 Biochemistry and molecular biology. Biochemists and Biochemistry (S323. prog 1)

Wednesday March 3

BBC1
6.40 Paleoclimatical problems. The Photograph is Missing (A313: prog 3)
7.05 Language in use. Accelerando at Chestnut Speed? (E211: prog 2)
7.30 Images and information. Your Own Optics Laboratory (ST241: prog 1)

BBC2
8.40 Introduction to pure mathematics Conics (M203: prog 3)
7.05 Arts foundation course. Doing History Writing History (A101: PA982: prog A1013)
7.30 An introduction to calculus. The Binomial Theorem (M82383: prog 2)
12.30* Developing mathematical thinking. Developing Mathematical Thinking: Functions (EM235: prog 7&8)
17.10* Schooling and society. Schooling for the Masses (E202: prog 1)

RADIO 3 (VHF)
6.15* Conflict and stability in the development of modern Europe c 1789–1970. Politics and Society in Germany, 1789–1820 (A309: prog 2)
6.30* Mass communication and society. Television Coverage of the Convention – a Critique (DE355: prog 2)
23.20* Microeconomics. Microeconomics and You (D222: prog 1)
23.40 Social psychology. The Biological and the Social (D305: prog 2)
24.00 Curriculum design and development. Tanzania: Education for Self-Reliance (E203: prog 3)
00.20 Science and belief, from Darwin to Einstein. Sir Oliver Lodge and the Ether of Space (A381: prog 2)
00.40* The Enlightenment. Pope's "Essay on Man" (A204: prog 3)

RADIO 4 (VHF)
22.30* Modern art from 1848 to the present: styles and social implications. Images of Reality (A351: prog 2)
23.50 Personality and learning. Freud and Ibsen (E301: prog 3)

Thursday March 4

BBC1
8.40 Social psychology. Psychosexual Differences: 2 (D305: prog 2)
7.05* Systems performance: human factors and systems failures. Search and Rescue (TD342: prog 1)
7.30 Materials processing. Brick by Brick (T352: prog 1)

BBC2
8.40 Organic chemistry. From Petroleum to Polythene (S244: prog 1)
7.05* Social sciences foundation course. Levels of Measuring (D102: prog 2)
7.30* Surface and sedimentary processes: case studies in earth science. Geophysical Techniques (S335: prog 3)
17.10* History of architecture and design 1890–1939. Charles Rennie Mackintosh: Hill House (A305: prog 3)

RADIO 3 (VHF)
8.55 Rome: The Augustan Age. Circus on Politics and Philosophy (A293: prog 2)
6.15 Art and environment The Kinnerton Oak Testcard (TAD292: prog 1)
6.35 Understanding space and time. Space, Time and Matter (S354: prog 1)
23.20 Science foundation course. Look Before You Leap (S198: prog 2)
23.40* Mathematics foundation course. Integration (M101: prog 3)
24.00 Technology and Society (T282: prog 12)
00.20 Mathematics: creativity zones and its legacy. 1814 (A312: prog 2)
00.20 Man's religious quest. The Sociologist and Religion (AD298: prog 4)
00.40 Decision making in Britain II. A. Simon on Decision Making (D203, prog 2)

RADIO 4 (VHF)
23.20 OU Announcements/Music FM
23.50 Environmental control and public health. Success and Failure in Pollution Control (PT272. prog 1)

Friday March 5

BBC1
6.40* An introduction to sociology. Eileen Barker meets the Moonies (D.207: prog 1)
7.05* Fundamentals of human geography. Land Use Change in Southern Ontario (D204: prog 2)
7.30* Materials of mathematics. Number Now and Then (MA1269. prog 1)

BBC2
8.40* Biology: form and function. Life on Seashores (S282: prog 1)
7.05* Ecology. Estuwaite and the Bleltham Tubes (S333: prog 2)
7.30* Systems: an interdisciplinary approach Setting Things Up (MDT241: prog 1)
17.10.* Elements of music. Score Reading (A241: prog 1)
17.30 Week-End Outlook

RADIO 3 (VHF)
6.55* Curriculum design and development. Tanzania: Education for Self-Reliance – Part 1 (E203: prog 3)
6.15 OU Announcements/Music FM
6.30* Cognitive development: language and thinking from birth to adolescence. Project Work and the Course (E262: prog 8)
23.20 The earth's physical resources. Help for the Non-Geologist (S206: prog 2)
23.40* Language in use. Control and Conflict: The Status of French (E263: prog 2)
24.00 Great Britain 1750–1950: sources and historiography. The Process of Research: An 18th Century Example (A401: prog 2)
00.20 OU Announcements/Music FM
00.40† History of architecture and design 1890–1939. Frank's Architecture and Design (A305: prog 3)

† repeated programmes

Courses

FIELD RESEARCH METHODS

A two day course: 25th/26th March 1982. An introduction to basic field research techniques from different observation to analysis of video.

Contact:
Jane Fielding
Department of Sociology
Surrey University
Guildford

Scholarships

SAKHAROV SCHOLARSHIP

The Ross McWhirter Foundation is offering a scholarship to honour Academician Andrei Sakharov. Three annual payments of £1,000, £1,100 and £1,210. A candidate, who may be reading any UK degree course, must have spent a large part of his or her life in Russia or some other communist governed state.

For details write to:
The Secretary,
The Ross McWhirter Foundation
2 Lord North Street, SW1P 3LB

Classified Advertisements

To place your advertisements write to:
The Advertisement Manager, The Times Higher Education Supplement, P.O. Box 7, New Printing House Square, Gray's Inn Road, London WC1X 8EZ.
Tel. 01-837 1234.

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Rates:
Classified Display – £8.25 pscc
Minimum size: 9cm × 1 col @ £74.25
Classified Linage – £1.60 per line
Minimum 3 lines – @ £4.80
Box number – £2.00

Copy deadlines:
Classified Display:
Friday in the week prior to publication
Classified Linage:
Monday 10.00 am in the week of publication

Universities

UNIVERSITY OF MALAYA

Applications are invited for the following posts:

CHAIRS:
Faculty of Medicine
Chair of Otorhinolaryngology; Chair of Ophthalmology; Chair of Medical Microbiology; Chair of Biochemistry.
Faculty of Dentistry
Chair of Prosthetics
Faculty of Science
Chair of Plant Physiology; Chair of Engineering Geology

ASSOCIATE PROFESSORS:
Faculty of Medicine
Department of Medicine in the following fields: Gastroenterology; Rheumatology.
Department of Social and Preventive Medicine: in the field of Epidemiology.
Department of Psychological Medicine in the following fields: Clinical Psychiatry; Clinical Psychology.
Faculty of Dentistry
Department of Oral Pathology and Oral Medicine: in the field of Oral Pathology and Oral Medicine.
Department of Oral Surgery: in the field of Oral Surgery.
Faculty of Science
Department of Chemistry: in the field of Physical Chemistry.

LECTURERS:
Faculty of Medicine
In the following Departments: Anatomy; Anaesthesiology; Biochemistry; Pharmacology; Physiology; Medical Microbiology; Obstetrics & Gynaecology and for the Obstetrics Social and Gynaecology Social Unit in the following fields (i) Psychology; (ii) Sociology; Ophthalmology; Otorhinolaryngology; Parasitology; Pathology; Paediatrics; Medicine; Psychological Medicine; Radiology; Surgery; Orthopaedic Surgery.

Candidates with appropriate postgraduate qualifications and working in a clinical department with patient care responsibilities will be considered for the payment of a clinical allowance by the University Hospital for staff in the Faculty of Medicine and by the University of Malaya for staff in the Faculty of Dentistry. This payment is subject to approval by the University Hospital Board for staff in the Faculty of Medicine or by the University of Malaya Council for staff in the Faculty of Dentistry, which when deciding will take into consideration the qualifications and experience of the staff in the relevant specialization.

Salary scales (approx. Stg. equivs.) per annum: Professor $804.85 × 34.85 – 839.53/Review Point/$874.42 × 34.88 – 909.30; Associate Professor $679.07 × 27.91 – 706.98/Review Point/$741.86 × 27.91 – 769.77; Lecturer $330.23 × 13.95 – 358.14/372.10 × 13.95 – 400/427.91 × 23.26 – 544.19/Review Point/$628.21 × 27.91 – 644.19. Entertainment, and rent subsidy where applicable, will be paid at current rates.

Further particulars, details of qualifications required, and application forms are obtainable from the Deputy Registrar (Estab.), University of Malaya, Kuala Lumpur 22–11, Malaysia, or from the Association of Commonwealth Universities (Appts), 36 Gordon Square, London WC1H 0PF.
Applications close on 23 March, 1982.

FEDERAL UNIVERSITY OF TECHNOLOGY, P.M.D. 0248, BAUCHI, NIGERIA

VACANCIES:
Applications are invited from suitably qualified candidates for the posts of:

CENTRAL ADMINISTRATION:
1. Academic Registrar
2. Director of Planning
3. Deputy Director of Planning

WORKS & SERVICES:
4. Chief Civil Engineer
5. Engineer Grade I
6. Senior Maintenance Officer (Electrical & Mechanical)
7. Senior Maintenance Officer (Estate & Buildings)
8. Maintenance Officer (Transport & Vehicle Maintenance)

HEALTH SERVICES:
9. Principal Medical Officer
10. Senior Medical Officer II
11. Principal Pharmacist
12. Pharmacist I
13. Senior Health/Nursing Sister
14. Staff Nurses
15. Medical Laboratory Tech. II

STUDENT WELFARE & CATERING:
16. House Keepers
17. Assistant Catering Officers
18. Senior Sports Coach

DUTIES:
1. Academic Registrar is responsible to the Vice-Chancellor for the day-to-day administration of academic matters including recruitment of academic staff, admission of students in collaboration with JAMB or its succeeding body, registration of students, students records, examinations etc. He shall also act as Secretary to Senate.
2. Director of Planning shall be an officer in the Vice-Chancellor's office and shall be responsible to the Vice-Chancellor for the academic and physical projections for planning purposes. He shall act as the Secretary to the Academic Planning and Development Committee(s).
3. Deputy Director of Planning shall perform the same duties as the Director, and shall assist the Director in the discharge of his/her duties as the Director may direct. He shall serve as the Secretary to the Academic Planning & Development Committee(s) when the Director is absent.
4. Chief Civil Engineer shall be responsible to the Vice-Chancellor for the supervision and/or coordination of the works of consultants, contractors etc. and shall be responsible for the maintenance of University properties including the infrastructural facilities and equipment other than laboratory and office equipment and for initiating the development of any additional infrastructural facilities that will enhance the quality of work and life on the campuses.
5. Principal Medical Officer shall be responsible for running the Health Centre and for the provision of medical care to staff and their families and students.
6. Matron and Housekeepers shall be responsible to the Dean of Students Affairs for welfare of the students in the Halls of residence.
7. All other staff shall carry out the duties assigned to them by the persons, for the time being, serving as their departmental heads.

QUALIFICATIONS:
For the posts listed under 1–5 and 9–12, a good University degree in the relevant discipline, appropriate professional qualifications and registration with the appropriate registration councils is essential.

Applicants for posts listed in 1–3 above must have had more than ten years post qualification experience in the relevant areas. In the case of the Director of Planning or his Deputy, a minimum of ten years post-registration experience in practice as an Architect or Planner or both is essential.

All other applicants must possess the recognised qualifications and adequate post-qualification experience to merit consideration for the relevant positions sought. Candidates for the post of Senior Sports Coach should possess an honours degree in physical education.

SALARY:

Academic Registrar	US$ 15	N14,280–15,000
Director of Planning	US$ 15	Ditto
Deputy Director of Planning	US$ 14	N12,732–14,052
Chief Civil Engineer	US$ 13	N11,384–14,820
Engineer Grade I	US$ 8	N8,336–7,488
Senior Maintenance Officers (Elec. & Mec./Est. & Buildings)	US$ 8	Ditto
Maintenance Officer (Transport & Veh. Maintenance)	US$ 8	Ditto
Principal Medical Officer	US$ 13	N11,384–14,820
Senior Medical Office II	US$ 11/12	N8,000-10,092–N10,080-11,352
Principal Pharmacist	US$ 11	N8,000–10,080
Pharmacist I	US$ 8	N8,336–7,488
Senior Health Nursing Sister	US$ 8	Ditto
Staff Nurses	US$ 6	N4,008–5,016
Medical Laboratory Tec. II	US$ 7	N6,336–8,216
House Keepers	US$ 7	Ditto
Assistant Catering Officers	US$ 9	N4,008–5,016
Senior Sports Coach	US$ 9	N7,550–9,040

CONDITIONS:
Appointment is either permanent or on contract basis or on secondment for at least 3 years. Economy class air or first-class sea passages paid for appointee, wife and five children on appointment, home leave and at the end of contract period or withdrawal. Employees of the University from US$ 7–15 shall normally be entitled to partly furnished accommodation provided by the University at rentals not exceeding 8⅓% of salary, or rent allowance of 20% of basic salary per annum in lieu. Contract appointments attract an additional 25% of basic salary. Designation for Nigerian Expatriates Supplementation Scheme possible in certain disciplines at Senior Lecturer Level and above. Car basic allowance of N540 p.a.

METHOD OF APPLYING:
Each application should include candidate's curriculum vitae as follows: (i) names in full; (ii) place and date of birth; (iii) home address; (iv) present postal address; (v) nationality at birth; (vi) present nationality; (vii) marital status; (viii) number and ages of children; (ix) secondary and post-secondary education (including dates and institutions); (x) academic and professional qualifications including distinctions with dates; (xi) statement of experience (including full details of former and present posts; (xii) other activities outside current employment; (xiii) names and addresses of three referees and (xiv) proposed date of availability for duties if appointed.
In addition to stating the names and addresses of three referees, applicants should request their referees to forward references on their behalf to

The Director,
Nigerian Universities Office,
180 Tottenham Court Road,
London W1P 9LE.

to whom applications (four copies) should be sent by 15th March, 1982, and from whom further information may be obtained.

UWIST
University of Wales

PROFESSOR
APPLIED BIOLOGY
APPLIED MICROBIOLOGY (BIOTECHNOLOGY)
Salary: Professorial Range from £15984

LECTURERS
BUSINESS ADMINISTRATION (2)
In Business Policy, Marketing, Organizational Behaviour, Personnel Management, Financial Management and Management Accounting.

ARCHITECTURE
ARCHITECT/MODERN HISTORIAN
Salary: £6070–£12860 (under review)

Requests (quoting Ref. THES and Post) for details and application form to Staffing Office, UWIST, Cardiff CF1 3NU.
Closing date: 22 March 1982.

IRELAND
National Institute for Higher Education, Dublin

The Institute emphasises applied studies, producing graduates for industry, business and the public service. The present student body of approximately 600 is planned to grow to 5,000 by 1991. Applications are invited for:

Lecturer/Assistant Lecturers in Mathematics

in the School of Mathematical Sciences. While further development plans are planned in the Mathematical Sciences, a substantial teaching commitment to first degree students already exists. Ability to teach Numerical Analysis would be an advantage, although not essential. Candidates should be well qualified academically, preferably with a higher degree. They will be expected to undertake continue research in their own field and to become involved in interdisciplinary projects of relevance to business and industry.
Salary scale: Lecturer: IR£10,974 – IR£15,318; Assistant Lecturer: IR£9,561 – IR£10,514.
Current as of 30/11/81; subject to increases in line with Agreement on Pay in the Public Service.
Application forms and other details are available from the Personnel Officer, National Institute for Higher Education, Glasnevin, Dublin 9, Ireland. Closing date 26 March, 1982.

CAMBRIDGE
KING'S COLLEGE
DIRECTOR OF MUSIC

The Governing Body of King's College invite applications for the above post. The Director of Music is responsible to the Provost and Fellows for the musical life of the College, and is required to play the organ to the standard expected in the College Chapel.

Further particulars may be obtained from the Bursar, The Provost's Lodging, King's College, Cambridge CB2 1ST, to whom applications should be sent not later than 5 March 1982.

EDINBURGH
HERIOT-WATT UNIVERSITY
RESEARCH ASSOCIATE
DEPARTMENTS OF BIOLOGICAL SCIENCES AND CHEMISTRY

Applications are invited from postdoctoral applicants for a research associateship in a joint project concerned with the interaction of nitrosoamines in soils.

The appointment will be for a period of two years at a salary in the range £6,660–£7,470 p.a.

Application forms and further particulars may be obtained from the Secretary to the Academic Registrar, Heriot-Watt University, Chambers Street, Edinburgh EH1 1HX, to whom applications should be sent by 15 March. The names of applicants will be treated in confidence.

EDINBURGH
UNIVERSITY OF DEPARTMENT OF PHILOSOPHY
TEMPORARY LECTURESHIP

Applications are invited for a Temporary Lectureship in the Department of Philosophy for the period 1st October 1982 to 31st July 1983. The successful candidate will be expected to teach Logic and Philosophy of Language, and to undertake research in Greek Philosophy. Applications, including a curriculum vitae and the names of two referees, should be sent by 31st March 1982 to the University Secretary, 7 Bristo Square, Edinburgh EH8 9AL, from whom further particulars may be obtained.

LONDON
UNIVERSITY OF THE LONDON SCHOOL OF ECONOMICS AND POLITICAL SCIENCE
LECTURESHIP IN LAW

Applications are invited for appointment from 1 October 1982 to a lectureship in law.

The appointment will be on the scale of £4,620 to £5,070 to £12,600 p.a. (under review) with F.S.S.U. and London Allowances. In exceptional circumstances, consideration may be given to appointment at a point above the minimum of the scale to candidates with outstanding qualifications and experience.

Application forms and further particulars are available from the Assistant Secretary (Academic), The London School of Economics and Political Science, Houghton Street, London WC2A 2AE, to whom completed forms should be returned by the closing date for applications, 31 March 1982.

UNIVERSITY OF EAST ANGLIA
Norwich

LECTURESHIP IN ELECTRONIC ENGINEERING

Applications are invited for the above newly established post in the field of microprocessor applications, with preference for candidates with emphasis on digital techniques. The successful candidate will be expected to undertake teaching and project supervision in digital and analogue electronics in a new undergraduate course in Electronic Systems Engineering starting in the autumn of 1982, and to develop research interests preferably have a higher degree and relevant industrial and/or academic experience. The post will be on appointment point on the scale £6,660–£10,470 p.a., inclusive of USS benefits, and will be tenable from 1 September 1982 or as soon as possible thereafter.

Applications (three copies), giving details of three persons to whom reference may be made, should be sent to the Establishment Officer, University of East Anglia, Norwich NR4 7TJ, from whom further particulars, including application forms, may be obtained. Please quote reference number 1/81/81. The names of applicants will be treated in confidence.

UNIVERSITY OF BRADFORD
Systems Development Officer

Applications are invited for the post of Systems Development Officer, in the Data Processing Unit within the Planning Services Division. The University is presently reviewing its future information processing requirements, and the Systems Development Officer will have particular responsibility for developing and implementing appropriate information systems for the University Administration, including the introduction of word processing services and the consolidation of systems development and management services.

Applications are invited from suitably qualified persons with relevant experience in systems analysis, in programming, in both high- and low-level languages, and in the provision of data processing facilities. It would also be an advantage if applicants had experience in communications and interactive computing. Salary will be at an appropriate point on the scale £5,250–£10,410 p.a.

Further particulars may be obtained from the Secretary to the University, University of Bradford, West Yorkshire BD7 1DP, to whom applications (seven copies), including the names of two referees, should be sent by 15 March. Please quote reference number 1/82 quoting Ref. SDO/FS/THE.

Universities continued

NIHE
NATIONAL INSTITUTE FOR HIGHER EDUCATION DUBLIN

The School of Communications has recently moved to purpose-built accommodation in a new building. The School has its own Television, Sound, Graphics, Print, Photography Studios and Psychology and Linguistics Laboratories, together with access to the Institute's Computing and Learning Resource Centres.

The School has responsibility for the B.Sc. (Honours) programme in Communication Studies together with a post-graduate Diploma in Journalism; it also provides lecturing support to a number of other degree programmes. The School has also developed active research projects in a number of disciplines.

Applications are invited from well-qualified applicants with a proven background in research or consultancy for the following positions within the School of Communications.

Lecturer/Assistant Lecturer in

JOURNALISM: Applicants will be expected to have extensive experience in the field of print journalism at all levels from the basic production of copy to the implementation of editorial policy.

ORGANISATIONAL COMMUNICATION: The successful candidate will teach syllabi on organisational communication, inter alia, on the B.Sc. Degree Course in Communication Studies and the Business Studies Degree Programme.

LINGUISTICS: Applicants should have particular interests in semantics and syntax and a general interest in theoretical linguistics.

SOCIOLOGY: Applicants should have particular strengths in one or more of the following: Sociology of Communication, Political Economy of the Media, International Communications, Informatics.

MEDIA PRODUCTION: Candidates should have substantial experience in Media Production, preferably both in Television and Radio within a broadcast and/or educational context.

Lecturers will be expected to supervise honours projects and post-graduate students in their respective disciplines.

Salary Scale: Lecturer: IR£10,974 - IR£15,318
Assistant Lecturer: IR£9,561 - IR£10,514

Current as of 30/11/81; subject to increases in line with Agreement on Pay in the Public Service.

Application forms and further details are available on written request from: The Personnel Office, National Institute for Higher Education, Glasnevin, Dublin 9, Ireland. Closing date 12 March 1982

SENIOR LECTURER 'A'
(PHYSIOTHERAPY RESEARCH)
(PL EQUIVALENT)
£11318–£12399 (Bar)–£14079
POST REFERENCE: 82/04

This post has been created to promote research in physiotherapy, and introduce research methods to degree and diploma students.

Applications are invited from physiotherapists or members of other disciplines who have had research experience in physiotherapy or related areas.

SENIOR LECTURER 'A'
(PHYSIOTHERAPY STUDIES)
(PL EQUIVALENT)
£11318–£12399 (Bar)–£14079
POST REFERENCE: 84/03

This post carries responsibility for the development of a specialist subject area at degree and diploma level, combined with research and administrative responsibilities.

Applications are invited from state registered physiotherapists.

Further particulars and application forms are available from:

Personnel Office, The Queen's College, Glasgow, 1 Park Drive, Glasgow G3 6LP
Tel: 041-334 8141

Completed application forms should be returned by Friday 15 March, 1982.

THE QUEEN'S COLLEGE GLASGOW
1 Park Drive, Glasgow, G3 6LP.
Tel: 041-334 8141.
A Scottish Central Institution.

UNIVERSITY OF LONDON
UNIVERSITY ENTRANCE AND SCHOOL EXAMINATIONS COUNCIL
GENERAL CERTIFICATE OF EDUCATION

The Council invites applications for the following appointments:

CHIEF EXAMINER VACANCIES
Advanced Level from June 1984
GEOGRAPHY (16–19 Schools Council)
ALTERNATIVE ORDINARY LEVEL FROM JUNE 1984
RELIGIOUS STUDIES
ORDINARY LEVEL FROM JUNE 1985
ENGLISH LITERATURE SYLLABUS A — GEOLOGY
SPOKEN ENGLISH — PHYSICS
ADVANCED LEVEL FROM JUNE 1985
CLASSICS — GERMAN
ECONOMICS — HISTORY
ADVANCED AND ORDINARY LEVEL FROM JUNE 1985
RUSSIAN ORAL
MODERATORS FROM 1 AUGUST 1983
BIOLOGY AND BOTANY — GERMAN
CLASSICS — MUSIC
DESIGN AND TECHNOLOGY — NUFFIELD CHEMISTRY
FRENCH — PHYSICS
GEOLOGY — POLISH

Applicants should be graduates or hold appropriate qualifications and should be under the age of 65 with five years recent teaching experience. Experience in GCE or CSE examining would be an advantage.

For application forms and further details write to The Secretary, University Entrance and School Examinations Council, University of London, 66–72 Gower Street, London WC1E 6EE. Applicants should enclose a self-addressed foolscap envelope. Completed application forms should be returned by the 6 April, 1982.

NEW GUINEA
The Papua New Guinea University of Technology
Department of Electrical and Communications Engineering

PRINCIPAL TECHNICAL OFFICER/ SENIOR TECHNICAL OFFICER

Applicants should possess a certificate/higher certificate qualification in electronic or telecommunications engineering or equivalent. A background in electronic measurements is required with several years experience in the repair and calibration of analogue and digital test equipment. The successful applicant will be expected to organize and conduct formal training for Papua New Guinea citizens in electrical measurements and the calibration and repair of test equipment.
Salary: K13,445–K16,345 (K-Stg 0.7566).
Appointment level will depend upon qualifications and experience.
The initial contract will be for 3 years, other benefits include a gratuity of 24% taxed at 2%, appointment and repatriation fares, leave fares for the staff member and family after 18 months of service, settling-in and out allowance, six weeks paid leave per year, education fares and assistance towards school fees, free housing. Salary continuation and medical benefit schemes are available.
Detailed applications (two copies) with curriculum vitae, together with the names and addresses of three referees, should be received by the Registrar, Papua New Guinea University of Technology, P.O. Box 783, Lae, Morobe Province, Papua New Guinea, by 31 March, 1982.
Applicants resident in the United Kingdom should also send a copy to the Association of Commonwealth Universities (Appts), 36 Gordon Square, London WC1H 0PF.

CANTERBURY
UNIVERSITY OF KENT AT
PERSONAL SOCIAL SERVICES RESEARCH UNIT

RESEARCH FELLOW (A6/ 82) AND RESEARCH ASSOCIATE (A7/82)

Applications are invited for the posts of Research Fellow and Research Associate on a DHSS funded programme within the Unit in commence as soon as possible for two years.

The Research Fellow is required to participate in the design, and run a special survey examining the needs of the elderly living at home, and how they are met. Candidates should have research experience in the field of social care and preferably a social work qualification or equivalent experience.

The Research Associate will assist in the preparation for a national survey of the needs of children. Candidates should have postgraduate research experience in the social sciences, a knowledge of quantitative methods preferably in survey applications. The post might appeal to someone with related research experience in local government.

Initial salary, according to qualifications and experience, will be in the range £6,090–£10,860 for pre-doctoral Fellow and £8,285–£9,585 for the Research Associate.

Application forms and further particulars will be sent on receipt of a 22p stamped, addressed envelope (10" × 8") by Mr J. E. Kelly, Senior Assistant Registrar. Faculty of Social Sciences, The Registry, University of Kent at Canterbury, Kent, to whom completed application forms should be returned not later than 26th March 1982. Please quote appropriate reference number/FILES. Informal enquiries may be made to Professor R. P. Davies or Mr A. C. Bebbington of the Personal Social Services Research Unit. H1

OXFORD
CHRIST CHURCH

Applications are invited for the post of

ASSISTANT CURATOR

in the Picture Gallery. The College expects to appoint for a period not exceeding seven years a person in his/her twenties, with high qualifications in the History of Western Art. The salary will be in the region of £5,350 for a person living in College and with an allowance for a person living out of College.

The person appointed will take up his/her duties by the end of September 1982.

Applications, naming two referees and enclosing cv should reach the Dean, Christ Church, Oxford from whom further particulars may be obtained by 24 March. H1

SHEFFIELD
UNIVERSITY OF DEPARTMENT OF GERMANIC STUDIES

M.A. in German Language Studies

Applications are invited for the one-year full-time M.A. course in German Language Studies, by examinations and dissertation. The course begins in October 1982, and comprises aspects of phonetics, phonology, syntax, semantics, and language variety.

Applications should be made to the Faculty of Arts Office, the University, Sheffield S10 2TN. Quote ref: R673/Dl. H1

Fellowships & Studentships

LANCASTER
ST. MARTIN'S COLLEGE OF HIGHER EDUCATION

ONE YEAR FELLOWSHIP: IN SOCIAL ETHICS

Applications are invited for the Fellowship in Social Ethics for the academic year 1982–83. Applicants should have a good honours degree in the Social Sciences or Humanities, and have appropriate research interests. The emphasis of the research may be applied or theoretical, but in any case should relate to the relationship between moral values and social order.

A salary of approximately £6,000 a year for the Fellow appointed.

The scope and expectations of the Fellowship, and its relationship with the College's BA (Hons) Social Ethics and other activities are outlined in a booklet of particulars which, with application forms, are available from The Principal, St. Martin's College, Lancaster LA1 3JD. Completed application forms should be returned as soon as possible. H2

PLYMOUTH
ROYAL NAVAL ENGINEERING COLLEGE/ UNIVERSITY OF READING
STIRLING ENGINE PROJECT
RESEARCH OFFICER

Required immediately to work on a SERC funded project on the computer simulation of Stirling Engines. The project is in collaboration with universities and industry in the USA.

Applicants should have an Honours Degree in computer-science, mechanical engineering or a related subject and experience in thermodynamics would be an advantage. The appointment will be based at the Royal Naval Engineering College, Manadon, and candidates will be for a fixed period of up to 14 months.

Starting salary up to £6,870 pa inc superannuation.

Apply with curriculum vitae, the names of two referees, to the Director of Research, Royal Naval Engineering College, Manadon, Plymouth, PL5 3AQ. H1

SHEFFIELD
THE UNIVERSITY OF

Applications are invited from men and women for the following posts:

1. POSTDOCTORAL RESEARCH ASSISTANT (Department of Control Engineering).

Tenable from 1 April 1982 for two years, to establish theoretical techniques for the development of modern control techniques for fuel firing, identification, computer control and state estimation of pulverised fuel mills in coal fired power stations. Supported by SERC in collaboration with CEGB, North Eastern Region, for the design and implementation of an optimised full loop pressure, load and combustion control involving theoretical and practical aspects of the problem, including software development and plant trials at a power station.

Applicants should have a good honours degree and should hold or expect to obtain a Ph.D. in Control Engineering or a related field. Salary in the range £6,510 – £7,380 a year on Range 1A.

Applications with the names of two referees to Dr E. Mylroi, the Department of Control Engineering, Mappin Street, Sheffield S1 3JD (tel: 0742-78555 ext 7642). Quote ref: R57/Dl. H1

2. POSTDOCTORAL FELLOWSHIP (Department of Biochemistry (Cellular/ Molecular Immunology).

Funded by M.R.C. for three years, to work on a new project on structural and functional aspects of the interaction of antibody with cell surface receptors. The appointee will join a group investigating mechanisms of cell activation and molecular immunology.

Minimum initial salary £6,010 a year on Range 1A.

Applications including curriculum vitae and the names of three referees, to go on as possible to Dr J. E. Humphries, Department of Biochemistry, Sheffield S10 2TN (telephone 0742-78555 ext 2323). Quote ref: R691/Dl. H1

MILTON KEYNES
THE OPEN UNIVERSITY
FACULTY OF ARTS
PROFESSOR IN ART HISTORY

Applications for this Chair are invited from suitably qualified persons experienced and talented in the teaching of art history and able to provide leadership in research. This post becomes vacant from October 1982 upon the retirement of Professor Aaron Scharf, first holder of the Chair.

Salary will be within the normal UGC approved professorial range plus USS benefits.

Further particulars are available from the Secretary (A5), The Open University, Walton Hall, Milton Keynes, MK7 6AA or by telephone from Milton Keynes 653718. There is a 24 hour answering service on 653744.

Closing date for applications: 1st March, 1982. H1

MILTON KEYNES
THE OPEN UNIVERSITY
FACULTY OF TECHNOLOGY
TEMPORARY LECTURESHIPS IN SYSTEMS ENGINEERING (OR POSSIBLE SECONDMENT)

Applications are invited for two one-year posts in the Faculty of Technology. The Systems Group has interests in teaching and research in the application of systems ideas to practical problems. The successful candidate will be closely involved in the production of a new foundation level undergraduate course entitled Complexity, Management and Technology. He or she will have responsibility for the teaching and application of systems methods in a range of problem areas.

The appointment could be either a one-year temporary appointment or a secondment from the candidate's current substantive salary for a temporary appointment will be on the Lecturer Grade scale £6076–£13460; individual arrangements are made for a secondment.

Further particulars and an application form may be obtained from Personnel Department (A5858/1), Faculty of Technology, The Open University, Walton Hall, Milton Keynes MK7 6AA (telephone Milton Keynes 653744). Applications (three copies) including three referees should be sent to the Secretary (A5), The Open University, Walton Hall, Milton Keynes MK7 6AA as soon as possible and in any case not later than 15th March. There is a 24 hour answering service on Milton Keynes 653744.

Closing date for applications: 15th March. H1

DURHAM
UNIVERSITY OF DEPARTMENT OF ENGINEERING

Applications are invited for the one-year post of RESEARCH ASSISTANT AND RESEARCH ASSISTANT, tenable for three years, from as soon as possible. The persons appointed will be concerned with the design and development of microprocessor controlled systems for the automated testing of cut and sew type garments. The project is funded by the Wool Industries Research Association and will be in collaboration with Lyle and Scott Ltd., who will provide the garments. Visits to SENG Robotics Project Ltd. are foreseen as part of the research. The project will be based in the Department of Engineering at the University of Durham's Microprocessor Centre.

Candidates should possess a degree in engineering and have experience in microprocessor and/or electronic systems.

Initial Salaries: Senior Research Assistant, to commence on £6,105 per annum on Range 1A (Research Assistants up to £6,870 per annum on Range 1) plus superannuation.

Applications (three copies) together with curriculum vitae and the names and addresses of three referees, should be sent by 12 March 1982 to the Registrar, Science Laboratories, South Road, Durham DH1 3LE, from whom further particulars may be obtained. H1

BARBADOS
UNIVERSITY OF THE WEST INDIES

Applications are invited for a Fellowship and College Lectureship in any field of British History, European History between 1500 and 1900 or American History. Candidates should be under 30 years of age on 1 October 1982. The Fellowship will be for five years in the first instance, and the successful candidate will be expected to hold not less than ten nor more than fifteen hours a week during Full Term.

The salary will be within the range £6,090–£8,580 per annum depending on age and experience. A reduction of 2½% will be made for anyone resident in Canada.

Applications should be sent to the Master of Clare, Cambridge, and should be accompanied by a curriculum vitae and the names and addresses of two referees. H1

CAMBRIDGE
CHRIST'S COLLEGE
LECTURESHIP IN HISTORY

Applications are invited for a Fellowship and College Lectureship in any field of British History, European History between 1500 and 1900 or American History. Candidates should be under 30 years of age on 1 October 1982. The Fellowship will be for five years in the first instance, and the successful candidate will be expected to hold not less than ten nor more than fifteen hours a week during Full Term.

The salary will be within the range £6,090–£8,580 per annum depending on age and experience. A reduction of 2½% will be made for anyone resident in Canada.

Applications should be sent to the Master of Clare, Cambridge, and should be accompanied by a curriculum vitae and the names and addresses of two referees. H1

Conferences & Seminars

EXTERNAL Degrees Seminar by John Bear PhD, probably America's university external degrees expert. The 3½ hours seminar on 20 March will be repeated in London by Dr Bear, on "How to earn a American, Canadian, or South African University Degree without Ever Leaving England". It is possible to obtain degrees at all levels totally by non-residential study. Brochure and fees/cvs e.a.e. for full details to: Degree Consultants Ltd (Dept. THES), 13 Bellmer House, 34 Paradise St., Birmingham B1 2BJ. H22

Colleges of Higher Education

DIHE

Department of Business & Professional Studies

LECTURER II/ SENIOR LECTURER IN BUSINESS FINANCE.

To teach Business Finance and related accounting areas on degree, diploma and professional courses.

Applicants should possess a good honours degree, and a professional qualification. A higher degree and relevant business and teaching experience would be an advantage.

Further details and application form, available on receipt of s.a.e. (closing date 11th March) from:

The Director's Secretary
Dorset Institute of Higher Education
Wallisdown Road
Poole, BH12 5BB

Colleges of Higher Education continued

EALING
COLLEGE OF HIGHER EDUCATION

SENIOR LECTURER IN VISUAL COMMUNICATION

Required for 1 May 1982, or as soon as possible after that date. Applicants should have wide teaching, professional/industrial experience. Administrative experience within a college would be an advantage.

Salary: £10,383 rising to a possible maximum of £12,909 pa inclusive.

Application forms and further details from The Chief Administrative Officer (TH/S), Ealing College of Higher Education, St. Mary's Road, London W5 5RF. Closing date: 12 March 1982. H6

WINCHESTER
KING ALFRED'S COLLEGE

LECTURESHIP IN ENGLISH

Applications are invited for a lectureship in English for September, 1982.

Expertise is sought in two or more of the following fields of literature: Renaissance, Restoration and 18th century, 19th century, 20th century, and Literary theory.

The successful candidate will be expected to teach mainly on the College's CNAA validated BA Honours degrees.

Further details may be obtained from The Principal, King Alfred's College, Winchester, SO22 4NR.

Closing date for applications is 15th March, 1982. H8

Polytechnics

NORTH STAFFS POLY

Head of Department of Business and Legal Studies

Grade 6

Applications are invited from well qualified graduates to lead this large multi-disciplinary department, which offers four degree courses in business studies and law, and an HND course in business studies.

The Polytechnic pursues a policy of vigorous encouragement of research, consultancy and staff development.

Salary: £15,045–£16,590 per annum.

Application forms and further particulars are available from the Personnel Officer, North Staffordshire Polytechnic, College Road, Stoke-on-Trent ST4 2DE.

Telephone: Stoke-on-Trent (0782) 45531, Ext. 297.
Closing date: Monday, 15th March, 1982.

RGIT

ROBERT GORDON'S INSTITUTE OF TECHNOLOGY, ABERDEEN
SCHOOL OF SOCIAL STUDIES

HEAD

The School conducts BA (CNAA) courses in Public Administration and Applied Social Studies, CQSW and part-time Social Work courses and services other degree and diploma courses. Further developments in prospect.

Salary £16,440 per annum (under review).
Removal expenses assistance.
Details from Secretary, Robert Gordon's Institute of Technology, Schoolhill, Aberdeen, AB9 1FR. (0224 633611).

RGIT

ROBERT GORDON'S INSTITUTE OF TECHNOLOGY, ABERDEEN
SCHOOL OF ELECTRONIC AND ELECTRICAL ENGINEERING

LECTURER

for the ordy, diploma and postgraduate courses and to participate in research and consultancy. Good honours graduate in Electronic/Electrical Engineering or related discipline required with expertise in:

Digital Communications or
Electronic Systems Design or
Computer Engineering

Salary range £6,894–£11,985 per annum.
Assistance with removal expenses.
Details from:
Secretary, Robert Gordon's Institute of Technology, Schoolhill, Aberdeen, AB9 1FR (0224 574611).

Colleges of Further Education

ilea Inner London Education Authority

Principal

City and East London College

Applications are invited for the post of Principal of City and East London College in succession to Mr. R.C. Aldridge who has been appointed to the Authority's Inspectorate.

The successful candidate will be appointed from 1 September 1982 or earlier if this is possible.

The College is situated in Bunhill Row, EC1, and in Pitfield Street, N16, and there are also several smaller branches.

The College is organised in seven departments:- Business and Secretarial, Arts, Law and Social Science, General Education (2 departments), Applied Social Studies and General Education, Electrical Engineering, Applied Optics.

The College has been in the forefront of developments for the disadvantaged and in the provision of courses for mature students entry to higher education.

Applicants should be well qualified academically, possess a sound knowledge of further and higher education together with teaching and administrative experience at a senior level and relevant experience in industry or commerce.

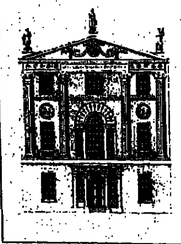
Under the provisions of the Burnham (Further Education) Report the College is in Group 6 and the salary for the Principal is £18,816 plus £758 London Allowance.

Further information and application forms (to be returned by Wednesday 10 March 1982) may be obtained from the Education Officer, (EO/FHE4) Inner London Education Authority, Room 257A, The County Hall, London SE1 7PB.

Administration

Royal Society of Arts Examinations Director

£18,000-£20,000



Founded in 1754, the Royal Society for the Encouragement of Arts Manufactures and Commerce takes initiatives in a wide field of applied arts and sciences.

The post of Examinations Director will be the most senior in the Royal Society of Arts Examinations Board which is responsible for the Society's role as a major examining body principally in commercial/office skills and languages, at levels ranging from elementary to post-graduate. During 1981/82 some 650,000 entries will have been processed. The Society has its own ICL 2903 computer.

Reporting direct to the Secretary (Chief Executive) of the Society, the Examinations Director will have full responsibility for all aspects of the work of the Board and will manage a staff of around 100 situated in London and Orpington.

This key appointment will require exceptional leadership qualities in a field of education which is undergoing radical change and development. First class management skills must be evident together with experience of vocational education or training.

Further details may be obtained from The Secretary, Royal Society of Arts, 8 John Adam Street, London WC2N 6EZ, tel: 01-839 2366. Applications for the post, marked 'Confidential' should arrive not later than 19 March.

ASSOCIATION OF UNIVERSITY TEACHERS

Appointment of two Officials

Applications are invited for the following posts:

(a) An Official to be stationed in Edinburgh. The main duties of this post will be to provide assistance to local associations of the AUT in university institutions in Scotland and North East England and to AUT (Scotland).

(b) An Official to be stationed at AUT Headquarters in London. The main duties of this post will be to provide assistance to local associations in university institutions in the London conurbation.

Experience of work in a trade union or professional association or in the education field is an essential qualification for both posts. Salary scale £9,966–£12,960. (The post in London will attract a London Allowance.) Where applicable, removal expenses will be met.

Applications may be made for either or both posts. Closing date for receipt of applications 17 March 1982.

Further details from:

General Secretary (FTO)
Association of University Teachers
United House
1 Pembridge Road
London W11 3HJ
Telephone: 01-221 4370

Applications are invited for this challenging senior post

CLERK TO GOVERNING COUNCIL AND CHIEF ADMINISTRATIVE OFFICER

Salary: £12,690–£13,884

Application forms and further details of the post may be obtained from:
The Personnel Office
Hull College of Higher Education
Inglemire Avenue
Hull HU6 7LU
or telephone 0482 446506
Closing date for receipt of completed application forms 13th March, 1982.

Hull College of Higher Education

Colleges of Technology

KENT
COUNTY COUNCIL
EDUCATION COMMITTE
NORTH WEST KENT COLLEGE OF TECHNOLOGY

Department of Mechanical Technology

A SENIOR LECTURER

is required to play a leading part in developing this newly created Department. Enthusiasm and energy are essential together with appropriate industrial experience and the ability to teach up to and including H.N.C.

The person appointed could have any one of a range of specialisms but will have a determination to keep abreast of modern developments.

London Fringe Area allowance. Assistance with relocation costs may be payable in appropriate cases.

Further information and application forms can be obtained from the Principal, North West Kent College of Technology, Miskin Road, Dartford, Kent DA1 2LU. Tel: Dartford 25471. H5

Announcements

GLOUCESTERSHIRE
TERM SCHOOL OF INTENSIVE ESOTERIC EDUCATION

1983 Six month intensive course
1st April–30th September

Information, application forms and details of short courses from Shoreburns Stables, Sherburn, Cheltenham, Glos. 04514 448.

"He who knows himself knows his Lord". H25

Librarians

HAMPSHIRE
COUNTY COUNCIL
SOUTHAMPTON COLLEGE OF HIGHER EDUCATION

LIBRARIAN

Applications are invited for the post of College Librarian, vacant on the retirement of the present post-holder with effect from 1 April, 1982.

The Librarian is responsible for the management of the library system, which operates on three sites. The person appointed will also be required to plan for the development of a central learning resource collection and will be fully involved in College committees and management.

Salary: Burnham Head of Department Grade II £13,785 to £14,937 (at current scales (NOC Conditions of Service).

Further particulars and application forms from the Finance and Staffing Officer, Southampton College of Higher Education, East Park Terrace, Southampton, SO9 4WW, telephone Southampton 25811 Ext 24 (please include stamped addressed A4 envelope) to whom the should be returned within 14 days of the appearance of this advertisement. H16

Research

LEEDS
THE UNIVERSITY OF
DEPARTMENT OF CERAMICS

Applications are invited for a post of postdoctoral RESEARCH FELLOW in the Department of Ceramics for work on a programme concerned with the fabrication and improvement of prospective of beta alumina (NaAl$_{11}$O$_{17}$) electrolyte. Applicants with an interest in all-ceramic techniques and the determination of mechanical properties would be advantageous. The research would be appropriate for a physicist or chemist oriented to a Mechanical Engineer with some materials experience.

Post available immediately for a fixed period of up to three years.

Salary on the IA Range for Research and Assistant Staff: £6676–£10,315, according to age, qualifications and experience.

Application forms and further particulars may be obtained from the Registry, The University, Leeds LS2 9JT, quoting reference number 62/77/2/01. Closing date for applications 19th March 1982. H10

Overseas

FACULTY POSITIONS IN THE COLLEGE OF ENGINEERING

Northeastern University Announces Faculty Openings As Follows:

Field of Specialization

Chemical Engineering
Process/Plant Design, Heat and Mass Transfer, Polymer Engineering and Science, Process Control Systems, Applied Physical Chemistry

Civil Engineering
Hydraulics, Hydrology, Structural Mechanics, Structural Design, Construction, Geotechnical and Transportation

Electrical Engineering
Solid State Device Fabrication, Digital Circuits, Computer Architecture, Software Engineering, Signal Processing and Communications, Control Systems

Industrial Engineering & Information Systems
Probability, Statistics, Operations Research, Simulation, Facilities Design and Human Factors

Mechanical Engineering
Mechanical Design; Solid Mechanics, Thermofluids and Material Science

Computer Science
A joint program offered by the College of Engineering and Arts and Sciences. All specialty areas are desired.

Candidates should have an earned Doctorate in the respective discipline for all faculty related program. Duties of all positions include teaching graduate and undergraduate courses, development of research, thesis supervision and graduate advising.

Tenure track positions in most departments available starting in April, 1982 or September, 1982. Salary competitive and commensurate with experience. Attractive fringe benefits and starting leave.

Send detailed resume with names of three references to: Dean, College of Engineering, 360 Huntington Avenue, Boston, MA 02115, U.S.A. Northeastern University is an equal opportunity/affirmative action employer.

Overseas continued

STATE OF BAHRAIN

UNIVERSITY COLLEGE OF BAHRAIN

University College of Arts, Science and Education invites applications for academic posts in the following subjects:

1. Arabic Linguistics
2. Classical Arabic Literature
3. Islamic Law
4. Educational Technology
5. Foundations of Education
6. Methods and Curriculum
7. Educational Planning and Administration
8. English Rhetoric
9. Modern English or American Literature
10. EFL
11. Applied Linguistics
12. Islamic History or History Education
13. Applied Linguistics (with experience in teaching French as a foreign language, as well as translation French-Arabic-French)
14. Geography Education or Economic Geography
15. Clinical Psychology or Cognition. (Required to teach in Arabic and English, preferably with cross-cultural educational training)
16. Taxonomy or Ecology. An interest in desert ecology would be an advantage.
17. Plant Physiology/Plant Biochemistry
18. Developmental Biology/Endrocrinology
19. Biological Education
20. Physical Chemistry
21. Inorganic Chemistry
22. Analytical Chemistry or Organo-Metallic Chemistry or Chemical Education or Applied Chemistry
23. Pure Mathematics
24. Algebra
25. Electronics
26. Physical Education

Candidates must have a Ph.D and experience in a recognised university. Applicants for Professor and Associate Professor positions must show evidence of research and publications.

Appointees will be expected to teach from Preparatory to final degree levels.

Language of instruction in Science, Mathematics and English Literature is English; in all other fields, Arabic.

Salary scales (One Bahrain Dinar = Sterling Pounds 1.40, US$2.85 approx.)

Professor	BD.10,800 × 9 to 16,200
Associate Professor	BD. 9,000 × 9 to 11,700
Assistant Professor	BD. 7,800 × 9 to 10,500
Instructor	BD. 6,600 × 9 to 8,760

Benefits and allowances include free, furnished, air-conditioned living quarters; full range of medical and health services; substantial educational allowances for up to 3 children; extra month's salary for each year of service; air tickets to and from Bahrain each year for family; two months paid summer vacation; allowance for shipment of personal effects at beginning and end of appointment, etc.

Bahrain has no income tax.

Contracts are for two years, renewable.

Candidates should apply in writing, citing three references, to The Acting Rector, University College of Bahrain, P.O. Box 1082, Manama, Bahrain, Arabian Gulf.

Applications should be received by the middle of March 1982.

ZAMBIA INSURANCE BUSINESS COLLEGE

The College was established in September 1980, to serve the needs of the Zambian Insurance Industry and to provide courses for insurance staff in other parts of independent Africa. It is expanding rapidly and is already widely recognised as an important institution in its field.

Applications are invited for the following posts in the Department of Business Studies which is responsible for a four-month full-time Diploma in Insurance Management course and for day-release courses in insurance and accountancy, including the Diploma in Insurance Studies which provides certain exemptions from the CII examinations. Short courses in insurance, accountancy and related areas are also held.

HEAD OF BUSINESS STUDIES

The person appointed will be responsible to the Director for all aspects of the Department's work and will undertake a moderate amount of teaching. Heads of Department are also expected to assist in the general development of the College.

Applicants should have substantial insurance experience and should either be able to teach Property and Transportation insurance subjects and, preferably, law or should be life assurance specialists who are also able to teach elementary non-life subjects. Previous teaching or training experience is highly desirable and a relevant professional qualification is essential.

LECTURER IN BUSINESS STUDIES

Applicants must be professionally qualified and should be able to teach a range of non-marine subjects and preferably another business subject such as law, economics or statistics. Previous teaching or training experience will be an advantage but is not essential.

Remuneration

The total remuneration package (including car and accommodation) will be worth in excess of £11,500 per annum after tax. In addition a 25% gratuity of total gross salary is payable at the end of a three year contract. Passages will be provided to and from Zambia and in addition there are generous fringe benefits which include overseas leave.

Applicants should send full curriculum vitae to the Director, Zambia Insurance Business College, 100 Leman Street, London E1 8HQ to arrive not later than the 31st March 1982.

UNIVERSITY OF NATAL
DEPARTMENT OF FINE ARTS AND HISTORY OF ART
PIETERMARITZBURG

Applications are invited from suitably qualified persons, regardless of sex, religion, race, colour or national origin for appointment to the post of:

SENIOR LECTURER IN CERAMICS

Applicants for the post should have teaching experience at tertiary level, and should be able to teach throwing for functional and sculptural purposes and to give technical lectures, and guide research, on clays, glazes and materials for studio ceramics.

The salary will be in the range: R14 370–R20 850 per annum.

The commencing salary notch will be dependent on the qualifications and/or experience of the successful applicant. In addition, an annual vacation service bonus equivalent to 93% of one month's salary is payable, subject to Treasury regulations.

Application forms, further particulars of the post and information on pension, medical aid, group insurance, staff bursary, housing loan and subsidy schemes, long leave conditions and travelling expenses on first appointment are obtainable from Miss J. Lloyd, South African Universities Office, Chichester House, 278 High Holborn, London WC1V 7HE. Tel. 242 1766 or 405 5834, with whom applications, on the prescribed form, must be lodged not later than 30 April 1982 quoting reference number PMB 95/81.

Tauber Institute Post-Doctoral Fellowship

The Tauber Institute invites applications for a 1 year post-doctoral research fellowship beginning September 1982. Doctorate awarded within past 5 years prerequisite for application. The Institute sponsors research in aspects of modern European history, including nationalism and socialism, modern Jewish history and culture, refugee problems, fascism and anti-semitism. Limited teaching duties. Stipend $16,000. Submit 3 copies of C.V., detailed research plan, and names and addresses of 2 referees to the Institute Director by 5 April 1982.
Tauber Institute,
Brandeis University,
Waltham, Massachusetts, 02254 USA
An equal opportunity/affirmative action employer

BRANDEIS UNIVERSITY

Personal

£15,000 PER ANNUM + Fed up with inactive? Held back in your career? A change of direction can now offer you an exciting career opportunity with a major public company in the London area. If you have drive, a proven track record and success ability, we'd like to hear from you now. Call Anthony Elkind 01-580 1076.

IMMEDIATE ADVANCES £100 to £50,000. Written terms on request. Regional Trust Ltd., 27 Clover Street, Piccadilly, London W1A 2QE. 24 hrs 499-8411/1000 approvals.

Colleges and Departments of Art

CITY OF LIMERICK
VOCATIONAL EDUCTION COMMITTEE

Lecturers in Graphic Design

(with advertising)

Fashion Design

The above Committee is the statutory body responsible for the organisation of Limerick College of Art, Commerce and Technology. The College provides a range of full-time third level courses in Fine Art and Design. Additional staff capable of teaching Graphic Design and Fashion Design up to diploma/degree level may shortly be required. Industrial experience essential, post-graduate qualification desirable.

These posts will be advertised in the national newspapers in the *Republic of Ireland*. Those who would like to be put on a mailing list for details of the advertisement are invited to send their curriculum vitae to the Principal, Limerick College of Art, Commerce and Technology, Athenaeum Building, Upper Cecil Street, Limerick, Republic of Ireland.

REMINDER

COPY FOR CLASSIFIED ADVERTISEMENTS IN THE

T.H.E.S.

SHOULD ARRIVE NOT LATER THAN 10.00 AM MONDAY PRECEDING THE PUBLICATION

THE TIMES HIGHER EDUCATION SUPPLEMENT

SPECIAL BOOK NUMBERS FOR 1982

March	2	Economics (I)
	12	European Studies
	19	Sociology (I)
	26	Maths & Physics (I)
April	2	London Book Fair (6–8 April)
	16	History (1)
	23	Psychology (I)
	30	Engineering
May	7	Philosophy
	14	Chemistry
	21	Law
	28	American Studies
June	4	Geography
	11	Social Administration
September	17	Education (II)
	24	Economics (II)
October	1	Biological Sciences (II)
	8	University Presses
	15	English (II)
	22	Sociology (II)
	29	Maths & Physics (II)
November	5	History (II)
	12	Psychology (II)
	19	Politics
	26	Computer Science

Special Features for 1982

April	2	Management Education
(Association of Teachers of Management April 5–8		
June	25	Computers in Higher Education
September	10	Higher Education in the Common Market
October	8	Academic Journals

Don's diary

Thursday

Field trip time again and I am waiting with six postgraduate planning students for the plane to Port Sudan which should have left yesterday. Arriving 30 hours late I am delighted to see our hosts still waiting and full of effusive greetings. At the hotel the manager insists it is not correct for me to stay at the same hotel as my students but, after a lot of discussion about sharing bathrooms, I am found a room. In the restaurant the Moslem Brothers are celebrating the banning of alcohol in the province: it's 15 lashes from now on. Back in my room I discover a disguised bottle of whisky in my suitcase – thoughtful wife.

Friday

The one-day weekend and the town is deserted apart from us and the scavenging camels. Hungry, we stop for a second breakfast of lamb grilled on hot stones but the communal drinking bowl persuades me I am not thirsty. Dinner that evening with a local bank manager, a customs official and an importer about 25 years old, illiterate but the sole concessionaire for two brands of German beer.

Saturday

The local planning staff are embarrassed by the students' direct questions but are more relaxed on a guided tour of the town. Vivid contrast between the colonial gridiron town centre and the ever expanding areas of spontaneous housing now accommodating more than half the town's population. Even more bizarre contrast provided by proposals for an urban bird sanctuary and a marine park. Dinner in a crowded souk cafe eating the Sudanese staple of beans.

Sunday

On a boat trip to the proposed marine park the first student is seasick before we even get to the harbour entrance marked by an ominous sign "No swimming – wild fish". An hour or so later we are moored in 700 metres of water on the edge of Sanganeb reef which forms a series of lagoons of varying depth and brilliance of colour. I try to reassert the academic objectives of the trip but for people who have never seen the sea before the colours and profusion of exotic fish are an overwhelming experience. Fortunately only one student falls in – and is retrieved. We then listen in awe as the lighthouse keeper points out the smugglers' dow recently wrecked on the reef; two saved and four taken by the sharks.

Prayers on the engine room casing coming back. The participants' inbuilt compasses permit them to compensate automatically for changes of course by the tug and to continue to direct their devotions to Mecca.

Monday

No success in getting the students up before seven. Today an enthusiastic explanation of the problems of fishing the Red Sea: too salty and too deep yet too shallow with fishermen who are too conservative. A better future apparently lies in the cultivation of shell fish. The rest of the day is spent in the squatter areas besieged by people who think we have come to help rather than just look.

Invited to dinner with an industrialist who discretely inquires if he can serve alcohol. I deliver an homily to the students on the dangers of alcohol and the virtues of tolerance. Back at the hotel there is again no electricity. It is over 40°C and the heat from the candle is too much to read by and I have to give up my efforts to finish *The Third World War* – which seems apposite reading for this region.

Tuesday

South of the old Turkish port of Suakin, the main port until the establishment of Port Sudan in the 1920s. Beautiful island site in a lagoon, abandoned and in ruins but still possible to admire the sophistication of the spaces and their details. Dismissed by the students as yet another example of colonialism and I am reminded of Lawrence's description of the Arabs whose "inert intellects lay fallow in incurious resignation." A baker is burning the last of the teak doors and mashribiya in his ovens.

Up a thousand metres into the Red Sea Hills to the summer resort of Erkowit. Another colonial relic of water meadows, squash courts and bungalows set in an extraordinary landscape of rocks sprouting huge cacti. Beautiful drive back through a landscape of hills and tents under a setting sun but now the nomads have Land Rovers.

Wednesday

Visit dock modernization scheme and proposals for new port but cannot detect any concern for the wider implications of such development. Lunch with the provincial commissioner so I put on my suit and tie and make a speech of thanks: the students are very impressed – more so by the numbers of plates and the rows of cutlery.

At the evening de-briefing session the students want to widen discussions to include their own problems. The questions are ethical rather than technical and I understand a little more the stresses of a society undergoing rapid change and the enormous problems to be faced.

Thursday

The local refinery and a drum-making plant receives our attentions where it is obvious that the factories' acts have not yet arrived. Gently reprimanded at lunch for not sitting decorously – the soles of the feet must never be shown. South Koreans building a tyre factory object to my taking photos of their dumping rubbish on the beach. I remind them that this is a democratic republic and I am exercising my rights – great hilarity and even the security guard seems to think it funny.

Commissioner invites us to a folk dance show in honour of a visiting group of British MPs. The Moslem Brothers have banished women from the stage and their parts are taken by young boys who dance with even greater ease and grace. Effect somewhat spoilt by fluorescent socks and trendy footgear. Speech of thanks by an MP that would have done credit to Monty Python. Dinner in the Red Sea Club where they give you sticks to beat the cats off.

Friday

Invited to second breakfast in one of the older squatter settlements. Plagued by flies and not too keen on the raw camel liver. Set off to look at the water supply plant with an increasingly reluctant driver who gets us stuck rather ostentatiously in a sand drift. Too tired to argue and tell him to turn back. We visit a new spinning mill, which has been waiting two years for an electricity supply, before stopping at a development of beach houses used for dubious evening and weekend activities.

Finally head for airport where I finish up on the plane next to one of the MPs who starts to question me about the availability of single women in Khartoum. I try to explain some of the problems but it seems rather pointless. Relieved to find my wife waiting with the car: odd to think of Khartoum as home.

Ian Haywood

The author is professor of physical planning in the University of Khartoum.

How Israel disarms its friends

Steven Lukes

I start from the assumption that Israel is an island of democracy in the Middle East, committed to the rule of law and free elections, liberal values and political equality. It is an open society in which freedom of thought and association survive; and it retains from its earliest days elements of a unique and benign idealistic socialist tradition of which the world has much need.

But it is a democracy that is flawed and endangered. Flawed not just by the unavoidable requirements of national security, but by its intractable relationship of conquest and domination over the Palestinians. And endangered, not just by a score of heavily armed Arab states and implacable hostility within, but by its current political leadership, whose annexationist and confrontationist vision of Israel is progressively corrupting its politics at home and losing its friends abroad.

I count myself as one such individual friend, and one who is continually dismayed by the ammunition Israel's policies and actions increasingly provide to her accumulating enemies. Friendship does not carry an obligation to be silent in such conditions, especially where important issues are at stake. Take the case of Bir Zeit University, which the Israeli authorities have just closed again (page 6), after students had badly manhandled an Israeli official and the rector declared himself unable to be responsible for the security on Israelis' on campus. This is the fourth such closure of Bir Zeit *since the Israeli occupation.*

Bir Zeit is a 2,000 strong campus on the West Bank, 15 miles north of Jerusalem. It should be noted that it only became an independent academic institution conferring degrees under the Israelis, along with four other such institutions in the West Bank and Gaza (before the Israelis none existed); and that almost all previous closures have, as in this case, occurred after serious disturbances involving both students and faculty.

Plainly, Bir Zeit's students are highly politicized, and now they are reported as supporting Islamic fundamentalism in alarming proportions. But the question is: is closing down their university justifiable? And, more generally, is academic freedom *respected in the Israeli occupied* areas?

Ask these questions of any of Israel's diverse enemies – whether left or right-wing, opportunistic or ideological virulent or genteel – and the answer will be obvious. But that answer will most likely invoke the double standards they normally apply in judging Israeli and Arab actions (when did they last protest at violations of academic freedom in Baghdad or Damascus or Cairo?) and most of them, in any case, would not recognize academic freedom if they bumped into it in broad daylight. A much more convincing answer comes from a group of five moderate Israeli academics whose *Report on the Condition of Universities in the Occupied Territories* makes disturbing reading.

Their report is careful and balanced, and based on extensive investigations. They begin from the *assumption that "the security situation* and the existence of a military government do not necessarily imply the abrogation of academic freedom". And they examine a number of typical official claims concerning these academic institutions: that they merely provide camouflage for subversive political activities, that their true interest is not academic at all, and that they are basically training the elite of a future Palestinian state.

Their findings are that "academic activity is conducted according to accepted norms and their administrations strive for the advancement and regular maintenance of this activity" despite their awkward position "between the hammer and the anvil"; that "in the academic institutions of the West Bank there exists a large *population of students* who are interested in acquiring a higher education, and a large number of lecturers who are concerned with providing that education"; and that, irrespective of their political goals, "the development of educated leaders who will serve the community to which the university belongs is an academic objective of the first importance".

They identify three main areas of conflict. First, the closures, which are officially justified as prevention and as punishment. But, they argue, *even where campus authorities* cannot guarantee order, "there is no doubt that the military government has the authority to enter the campus (like any other place) in order to investigate and to deal with criminal activities or breaches of the peace". "the committee heard no convincing reason why, if the military government were prevented from closing the university, it would be hampered in any significant way from preventing disturbances of the peace". (As this appears to have been so in the present case.)

As for closure as a punitive measure, it is, they write, "totally unacceptable as it is a form of collective punishment which is imposed on all students and teachers, with no connexion to their personal responsibility for the events which resulted in punishment". Second, visiting lecturers' permits are delayed or blocked. And third, books and periodicals are extensively censored.

There are lists of banned books (for two such lists see *Index on Censorship*, October 1981 which reports that "any book may be removed from circulation at the whim of the military authorities at any time"), books ordered by the universities are arbitrarily disallowed, though many are available in other Israeli universities, and the same goes for periodicals, many of them published in East Jerusalem. On the other hand, the authors stress that in the admission of students, the setting of curricula, and budgeting there has been "no real friction between the military *government and the universities*".

As to their recommendations, they propose, first, the rescinding of the objectionable Order 854 which, though not yet fully applied, allow the occupying authorities to license academic institutions, control their appointments (with very wide discretion) and supervise their curricula and textbooks. Second, the military government should establish possible contacts, which currently do not exist, with the West Bank's academic community. Third, they should (the authors mildly say) reconsider abolishing censorship at least in the universities: there should be "no restrictions whatever on the materials in university libraries, for the purposes of study, research and analysis", their use for incitement *can be dealt with otherwise. And finally, the au*thorities should stop closing universities.

Indeed they should. Menachem Milson the civilian governor of the West Bank and a noted academic should not be presiding over these developments. They have ominous connotations and are in any case unnecessary. They are one more flaw in and danger to Israel's democracy. And they serve only to forge Israel's many enemies, within and without, while disarming her friends.

An open letter from a UGC subcommittee member

To quit or not to quit?

I wonder if readers would spare a few moments to share a dilemma with me. Over Christmas I decided, after a great deal of thought, to resign from the UGC subcommittee of which I am a member. When I discussed it with a colleague, he argued forcibly that to resign would be quite wrong.

The final straw was hearing Sir Keith Joseph, yet again, like other members of the Government, hide behind the "judgment of peers" defence. It seemed to confirm that I, like other academics on UGC committees, was being used to give academic respectability to a policy of which I totally disapproved.

Having spent my working life trying to make higher education available to as many as possible who could benefit from it, I find it an outrage not only that 20,000 young people who could complete a university course will be denied it, but that the knock-on effect through the ability range means that perhaps 50,000 school-leavers will have to settle for less than they are capable of, and at relatively little ultimate saving. Our higher education participation rate is allowed to fall from 1 in 7 to 1 in 8, while Japan's is improved from 1 in 4 to 1 in 3. This alone has the makings of a resignation issue.

In addition I read weekly of yet more parts of universities threatened with closure or irrevocable damage, including such departments as Russian, education and architecture at Bristol, which I understand from colleagues are among the best in the country. It was the awful thought that I was somehow helping implement the odious educational policies of the most philistine government in memory that persuaded me I should resign, even though I have never resigned from anything in my life simply because the going was tough, or because I did not like what was going on, preferring to fight from within.

My colleague argues that if I do resign another less capable or less benign will take my place. I can easily counter that proposition. History is littered with quislings who collaborated because they flattered themselves their own virtues surpassed those of any possible successor.

The second argument is harder to handle. If academics resign, it is said, then civil servants, or worse, politicians will decide the fate of universities. I am not hustling others into quitting. I protest. Indeed for fear of prejudicing others I have myself delayed resigning. A single resignation will be forgotten in a week and have no effect, he replies.

His third point is the most difficult of all. I have a duty to my colleagues not able to fight their corner through a UGC committee, to battle on their behalf where I might do some good. Walking away is the coward's way out. But the protests of myself and my colleagues on UGC committees are ignored by the Government. The "fight" if one can call it such, is one-sided.

Should I resign? I shall. Of course, have to make up my own mind, but if readers could empathize with someone faced with the dilemma I describe, and say what they would do in similar circumstances, it would be very helpful to know the views of colleagues whose interests I am not able to sustain by staying on the UGC subcommittee, and may better by resigning from it.

Worried Blue Eyes

(Name and address supplied)

LETTERS TO THE EDITOR

Magic formula of the wizard of Bovis

Sir, – Sir Keith is not like some of his predecessors an indolent minister, but rather, hyperactive. Before the higher education system has had time to absorb the last piece of irrationality, the next is loosed after it, baying and snapping at its heels and ours. The scientific mind must assume it to be a deliberate process of conditioning; we shall soon accept this crazy world as normal. But these could of course be a simpler explanation.

We have just been told, in his latest circular, that there shall be no new courses in the public sector of higher education, unless they pass through a net the mesh of which is so small that the merest minnow would be caught. Even existing courses may undergo only minor modification. This is the magic formula of the wizard of Bovis for ensuring that British industry has exactly the right mix of highly qualified manpower to take best advantage of the great expansion in the new technologies which is just around the corner – or at least, just around several corners.

Take as an example the revolution that is already under way in information technology, and in consequence in business administration too. Sir Keith has just ensured that no polytechnic or college can respond to it. Doubtless ministers will in a couple of years' time once more complain that higher education is failing to meet the needs of employers.

Colleges will not even be able substantially to revise a course which their own experience has shown to be bad, or less good than it should be. Perhaps, after many summers have passed, the NAB will get around to excising all such courses, although it is not yet clear how, since many of its present members could not find a poor course from a pig's ear. In the meantime, Sir Keith's edict can only be a charter for the preservation of the irrelevant and the second-rate.

Perhaps it is to such courses that colleges have recruited the 8,000 students who are above "the figure forecast" (target?). Sir Keith's acolyte Mr Waldegrave says that this will "place strains on institutions". The strains would of course be very much greater if the students had not been recruited.

Poor William has forgotten that he has just sponsored the introduction of funding based on unit costs. That means that to get enough money to operate, a college must either sack staff, or take more students, or both. Even fellows of All Souls, unsullied as that college was by students, must be aware that colleges would prefer the second of these choices, will take the third if driven to it, and will resist the first, by itself – because it will place great strains on them.

If this were not enough for one month, or year, or decade, Sir Keith tells us that "the effectiveness of research into the hard sciences is higher" than work in the social sciences. I remember that when I was in DES we spent some 20 times as much on research in high-energy physics and radio astronomy alone as the total budget of the SSRC. I think everyone working in these fields *must* have been a Harrovian, for whenever I asked when we could expect to see the practical spin-off of such research, the answer was always: "Forty Years On".

But I suppose it depends on what one means by "effectiveness". Clearly British *management is so sharp* that we need no public investment in research in management studies, as Sir Keith says. The three million unemployed might not share that view – but what do they know about it?

Since the Algerian incident, Mrs Thatcher is said to have a new nickname – "Mother". Of DES and its ministers, we can only say to her: "Mother, forgive them, for they know not what they do."

Yours faithfully,
G. T. FOWLER
Acting Director
North East London Polytechnic.

Experiments on animals

Sir, – We were very pleased to see the two articles – "The uses and abuses of animals in laboratories" by Robin McKie and "How much pain is really necessary?" by David Jobbins (*THES*, February 5) presenting two sides to the use of living animals for research purposes.

This committee has been endeavouring for some time past to seek the middle ground in this very *contentious* issue and, in our proposals to government we have outlined four main objectives of new legislation:

1 Restriction of Pain.
2 A very substantial reduction in the number of animals used.
3 The development and use of humane alternative methods of research.
4 Public accountability.

We believe, as do many scientists, that these objectives can be achieved with little or no disruption of medical, dental and veterinary research.

The importance of public discussion on these issues cannot be understated at the present time and we congratulate *The THES* for bringing these issues to the attention of their readers.

Yours sincerely,
CLIVE HOLLANDS, Secretary
Committee for the Reform of Animal Experimentation.

Engineering education

Sir, – Your leader of February 5, generously commends the engineering professors and their colleagues for having been responsible, in spite of the difficulties caused by the university cuts and economies, for what progress has actually been achieved so far in developing university engineering education in recent years. However, you give the Finniston committee, which did an admirable job, too much credit for having been the first to propose enhanced engineering courses aimed at providing *greater* emphasis to what you call *"engineering experience"*. You *claim* that such courses were only subsequently backed by academics".

During my chairmanship from 1976 to 1980 of the Engineering Professors' Conference, the university engineering professors as a body took a progressively stronger line on the need to establish extended and enriched engineering degree courses, while not neglecting the need to improve greatly the continuing education of professional engineers in post. As early as 1976, before the call from the UGC for a few elite engineering courses, the EPC started drawing up proposals for extended and enriched courses. At its annual assembly in March 1977, several months before even the announcement of the membership of the Finniston committee, the EPC gave general support for the introduction of these four-year courses across the entire university system.

In its main evidence to the Finniston committee in May 1978, the EPC recognized that the whole engineering education system was in need of a "radical overhaul" and spelled out its proposals in detail, many of which were accepted by the Finniston committee. The EPC's central proposal was the development of four-academic-year courses "to bridge the dichotomy between the graduate's knowledge of engineering science and his ability to tackle real engineering tasks"; these courses would provide "systematic instruction in *professional studies in engineering* practice – for example by giving attention in depth to engineering design".

The engineering professors went further at their 1980 annual conference, resolving that all engineering students needed these extended courses and at its 1981 conference decided to aim at full conversion to the new courses by the end of the decade. Partly as a result of EPC pressure, the UGC has now agreed to permit each university to start extended engineering courses within its existing student number allocations, but without the extra resources that the Finniston committee and most other observers have considered necessary.

Yours faithfully,
A. W. J. CHISHOLM
Professor of Mechanical Engineering
University of Salford.

Teaching methods

Sir, – The first and last sentence of your otherwise admirable article entitled "Teaching academics to teach" (*THES*, February 12) on our course seem to have got unduly compressed. It is therefore not clear from it that our course which *uses* distance teaching methods, is aimed at *all* teachers in higher education, and not only those who themselves teach by distance methods. Secondly, the idea that one person per department should maintain teaching standards is not what we intend. We hope that such a person will act as a *resource* for his or her colleagues, particularly concerning curricular development and change, which will make it possible for the department as a whole to maintain teaching standards.

Yours faithfully,
I. R. B. ELTON
Institute for Educational Technology,
University of Surrey.

Cost of NUS

Sir, – I bring your attention to the article entitled "King's votes to stay out of union" (*THES*, February 12). The actual sum of money involved is *£12,000* not *£1,200* as Dave Aaronovitch has stated. This does of course make a considerable difference to the anti-NUS case.

Dave Aaronovitch (President of NUS) has already misquoted this figure in *National Student*; I would suggest that he be a little better informed in the future else the credibility of NUS will be further doubted in the eyes of the media and students other than those at King's College, London.

Yours faithfully,
RICHARD YARWOOD
President
King's College London Union of Students,
The Strand, WC2.

Service tradition

Sir, – I refer to Glenn Langford's book review "Freedom or equality?" (*THES*, February 19), in which he discusses the advocacy of the "service" tradition of education by Tyrrell Burgess in "Bias is of the Essence", a chapter in *Is Higher Education Fair?* (edited by David Warren Piper). I raise two points in criticism of Dr Langford's article:

1. He states that to promote the service approach to education in the way discussed by Burgess and practised at North East London Polytechnic's School for Independent Study *is to propose* "the abolition of higher education and its replacement by a social service which accepts *uncritically* the limitations imposed by an existing and inevitably parochial outlook. [My italics.]

However, this is just not true for while students' problems are recognised as being the only starting points for *their* learning there is no suggestion that their initial problems and theories should be accepted uncritically nor that the world of public debate should be withheld from them. Contrary to Dr Langford's understanding, to follow the logic of learning is to help students to be more critical of theories but it recognizes that this is not facilitated by teachers attempting to force-feed students with pre-written syllabuses.

2. Dr Langford says that "students at the North East London Polytechnic, if indeed educated on the lines Burgess suggests, could never become scientists – or . . . philosophers" and that "they must remain immersed in the everyday, practical problems which they bring with them."

I have been a postgraduate student at the School for Independent Study and have been "educated along the lines suggested". As a philosopher, scientist and teacher, the practical problem which I am studying is the improvement of classroom practice. My research, now registered for study towards MPhil/PhD is titled *How can classroom practice be improved? an investigation of theories of learning in classroom practice.* Would Dr Langford wish to argue that this is an unworthy problem for research?

Yours faithfully,
JOANNA SWANN
35 Cheviot Road,
London SE27.

Cockcroft on maths

Sir, – Your account of the Cockcroft report (*THES*, January 29) concentrates on its proposals for administrative changes but surely its suggestions concerning the kind of mathematics that should be taught in schools are also relevant for the recruitment of mathematics teachers.

The most important of these suggestions is that school mathematics should be developed from the bottom up instead of from the top down. The report justifies this proposal by a study of past examination results, which shows that the present O level/CSE system does not meet the needs of the bottom 40 per cent of pupils, and may be unsuitable for the next 25 per cent as well. A change in this direction can also be justified by recent developments both in mathematics and the use made of it by other school subjects, together with the increasing availability of calculating machines, computers and various forms of graph paper.

School mathematics is taught in three stages, practical, pure and applied. Practical mathematics involves teaching mathematics through its applications; pure mathematics makes no use of applications; and applied mathematics involves using known pure mathematics to solve problems from Newtonian physics.

Practical mathematics is generally considered suitable for both beginners and less able pupils. Primary school mathematics is essentially of this kind. Arithmetic, geometry, trigonometry and algebraic notation have many everyday uses which can be used to develop either a general mathematics course or specialized courses in commercial arithmetic and technical drawing for use in secondary schools.

Today all school sciences make use of mathematics; they include biology, geography and the social sciences. Since these newer users of mathematics are much less exact sciences than Newtonian physics, their scientific theories cannot be expressed in simple mathematical terms. Consequently applications to these sciences cannot be taught as applied mathematics at school level. Although it will not be easy, it should now be possible to extend the range of practical mathematics to include graphical algebra, differential calculus and statistics.

The foundation list of topics provides a guide for the development of such a course.

Yours faithfully,
FREDA CONWAY
27 Cedars Court, Leicester.

Islamic code

Sir, – The headline synopsis intended for your report, "Iran's lost souls" (*THES*, February 19) was surely: "Students who flout the Islamic code put their lives in danger"; not "Islamic", as you printed.

Yours faithfully,
STANLEY ALDERSON
7 Highfield Avenue, Cambridge.

Social science studies

Sir, – I would like to ask Sir Keith Joseph, through your columns, whether he will believe, when there are major riots in every city every year, that will be evidence of a need to study social science?

Would he attempt to solve the problem by enrolling a quarter of the population in the police?

Industry is the servant of mankind, not its master. The proper study of mankind is Man.

Yours faithfully,
MICHAEL G. MOORE
Senior Experimental Officer (Computing)
University of Manchester Institute of Science and Technology.

Union view

Comparisons don't pay the rent

When I was little I used to believe that you had to be very clever to be a government minister. After all, if you laid claim to being able to run a country, then you must have something going for you. That didn't mean to say that I *approved* of all that governments did, just that they must have good reasons for the decisions they took. Later, in my adolescent ultra-left phase, I varied this to thinking that governments were extremely clever conspirators in a plot to maintain capitalism and do down the working-class. After two years as president of the NUS, making submissions, formulating arguments, leading delegations, and so on – nothing strikes me so forcefully as the sheer incompetence and negligence over important matters that characterises decision-making at the highest levels.

In the week before NUS, with the support of the Education Alliance, launches its Grants Action Week, there is still no real indication that the Government either understands, or wants to understand, the magnitude of its decision to slash student awards in real terms. Readers of *The THES* will be familiar with NUS's analysis of what the Chancellor's announcement in December will do for British students: the fact that a 4 per cent increase in the grant causes massive hardship for a group whose living costs have increased at a greater rate than indicated in the retail price index; the fact that parents are being asked to pay considerably more towards the grant – effectively meaning that many will take a cut in the *actual* amount of money they receive next year; the fact that cuts in Rate Support Grant are bound to decrease the level and numbers of discretionary awards offered by L.e.a.s in the non-advanced sector.

No one has yet seen fit to disagree with these contentions, which taken together suggest at best a substantial additional pressure on students, and at worst significant numbers leaving courses because of financial problems and a large disincentive to study.

No one, that is, except the ministers responsible. The most coherent response from them appears to be an exhortation to grin and bear it, since other sections of society are being treated in a similar way. One supposes that next year's student, fixed with a board and lodging charge that she or he cannot afford to pay is going to turn round and say "Oh well, *that's* all right then! At least civil servants are only getting 0–5 per cent." The fact is that comparisons don't pay rent, can't buy books and can't force parents to provide contributions.

When the rate of mandatory award was first set in 1962, it was supposed to provide the bare minimum that students needed for subsistence, plus a small pocket-money element. The December announcement means that the full grant would fall to 79 per cent of the 1962 level. After three years of decline NUS has repeatedly asked the DES to carry out its first student income and expenditure survey for nearly a decade, so that we can ascertain other than anecdotally what the true problem is. They have refused. The result is that when ministers pronounce on student grants, they simply don't know what they're talking about. Vice chancellors, directors, lecturers and staff should do everything they can next week to help students participate in the Grants Action Week. It looks like the only way we can get the Government to recognize that it is impoverishing a large section of the British population.

David Aaronovitch

The author is president of the National Union of Students

Letters for publication should arrive by Tuesday morning. They should be as short as possible and written on one side of the paper. The editor reserves the right to cut or amend them if necessary.